

Nos. 2015-1232, -1234, -1239

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**In the United States Court of Appeals  
for the Federal Circuit**

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**HOWMEDICA OSTEONICS CORP. AND STRYKER IRELAND LTD.,**  
PLAINTIFFS-APPELLANTS,

*v.*

**ZIMMER, INC.,**  
*DEFENDANT-APPELLEE,*

AND

**SMITH & NEPHEW, INC.,**  
*DEFENDANT-APPELLEE,*

AND

**WRIGHT MEDICAL TECHNOLOGY, INC.,**  
*DEFENDANT-APPELLEE,*

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*ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF  
NEW JERSEY, NOS. 11-CV-6499, 11-CV-6500, AND 11-CV-6511,  
HON. SUSAN D. WIGENTON, PRESIDING*

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**BRIEF OF PLAINTIFFS-APPELLANTS HOWMEDICA  
OSTEONICS CORP. AND STRYKER IRELAND LTD.**

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## CERTIFICATE OF INTEREST

Pursuant to Circuit Rule 47.4, undersigned counsel for Plaintiffs-Appellants Howmedica Osteonics Corp. and Stryker Ireland Ltd. certifies the following:

1. The full name of every party or amicus represented by us is:  
Howmedica Osteonics Corp. and Stryker Ireland Ltd.
2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by us is:  
Not applicable.
3. All parent corporations and any publicly held companies that own 10% or more of the stock of any party represented by us are:  
Howmedica Osteonics Corp. and Stryker Ireland Ltd. are indirect wholly owned subsidiaries of Stryker Corporation. No publicly held corporation owns more than 10% of Stryker Corporation's stock.
4. The names of all law firms and the partners or associates that appeared for the parties now represented by us in the trial court or expected to appear in this court are:  
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Dated: March 3, 2015

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## **STATEMENT OF RELATED CASES**

Pursuant to Federal Circuit Rule 47.5, Plaintiffs-Appellants Howmedica Osteonics Corp. and Stryker Ireland Ltd. state:

1. This appeal is a consolidation of Appeal Nos. 2015-1232, 2015-1234, and 2015-1239. There have been no prior appeals in this case.

2. Counsel for Plaintiffs-Appellants are aware of no pending cases that would directly affect, or be directly affected by, this Court's decision in the pending appeals.

## INTRODUCTION

This case involves a patent on the design for a prosthetic hip. That patent (re-examined U.S. Patent No. 6,475,243) is directed to a novel and inventive design for securing together certain components of the artificial hip in a manner that maximizes a surgeon's ability to tailor a device to the needs of a particular patient. This pioneering invention by Appellants Howmedica Osteonics Corp. and Stryker Ireland Ltd. ("Stryker") resulted in a prosthetic hip design that is more effective, more customizable, and allows for significant cost savings as compared to prior art devices.

Specifically, the '243 patent covers a design in which an artificial socket (called a "shell" or "cup") is able to mate with a "bearing" that in turn receives the "ball" at the top of the patient's thigh bone. The '243 patent describes a universal shell, which is capable of receiving and locking a bearing made of a hard material (like ceramic or metal) *or* a bearing made of a soft material (like polyethylene plastic), depending on the needs of the patient. If the chosen bearing is plastic, it locks with the shell using a "rib-and-groove" mechanism; if the bearing is ceramic or metal, it locks with the shell using a "taper" mechanism. This is a

significant improvement over the prior art, in which shells were compatible with only a single type of bearing material and no universal shell existed.

In this case, Defendants Smith & Nephew, Inc. (“S&N”), Wright Medical Technology, Inc. (“Wright”), and Zimmer, Inc. (“Zimmer”) (collectively, “Defendants”) introduced universal shells mimicking those claimed in Stryker’s ‘243 patent. According to Defendants, they do not infringe the ‘243 patent because their ceramic bearings do not include a “sleeve” (except for S&N’s) and because none of them sell products with the groove portion of the rib-and-groove mechanism placed “essentially midway” along the taper. But the asserted claims require neither of those design elements. Indeed, they do not even *hint* at either of those limitations.

Nonetheless, as Defendants requested, the district court inserted into the claims both “sleeve” and “essentially midway” limitations. In so doing, as to the sleeve, the district court ignored the sharp contrast between the asserted claims, which say nothing about a sleeve, and other unasserted claims that expressly require a “sleeve.” Instead, the court imported a “sleeve” element from unasserted claims, from a pre-

ferred embodiment disclosed in the patent's specification, and from Stryker's commercial embodiment. These were textbook claim construction errors. They require reversal.

As to the district court's "essentially midway" requirement, the court again drew its construction from the patent's preferred embodiment. But, this Court has repeatedly instructed that claims *cannot* be limited by preferred embodiments. Making matters worse, in creating the "essentially midway" requirement, the district court effectively rendered redundant those dependent claims which *do* contain the "essentially midway" limitation. That was improper where—as here—nothing in the intrinsic record required it. What the asserted claims say is that the groove need only be "juxtaposed with" the taper. But "juxtaposed with" obviously does not mean "essentially midway." Nor does any evidence suggest that a person of ordinary skill in the art (or anybody else) would consider the phrases to be equivalent. "Juxtaposed with" simply means "positioned nearby." In holding otherwise, the district court committed a clear legal error.

Compounding these claim construction errors, the district court abused its discretion when it applied its local rules to block Stryker

from asserting infringement under the doctrine of equivalents—saying that it was too late to do so in view of Stryker’s earlier infringement contentions. But it was the district court’s erroneous claim constructions that *created* Stryker’s doctrine of equivalents case in the first place. The first time Stryker reasonably *could* have asserted equivalency as to the “essentially midway” requirement was *after* the claim construction opinion issued and declared this to be a limitation. Nevertheless, the court allowed Defendants to move for summary judgment without facing any doctrine of equivalents claim.

At every turn, the district court committed legal errors depriving Stryker of its infringement claims—until Stryker was left with none at all. The Court should reverse.

### **JURISDICTIONAL STATEMENT**

Final judgments were entered on December 18, 2014. A1–3. Stryker timely filed notices of appeal the next day. A119; A127; A135. The district court had jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a). This Court consolidated the appeals on January 13, 2015. Order, Doc. 2.

This Court has exclusive jurisdiction over these consolidated ap-

peals pursuant to 28 U.S.C. § 1295(a)(1).

## STATEMENT OF THE ISSUES

I. Whether the district court erred in construing the claim language related to “**securement tapers**” as “requir[ing] that the internal taper of the shell mates with the external taper of **a metallic securing member (i.e., sleeve)** secured to and separate from the bearing member.”

II. Whether the district court erred in construing the claim language relating to the term “**juxtaposed with**” to mean “the recess is **essentially midway** along the taper such that the effectiveness of each is not compromised.”

III. Whether the district court abused its discretion in applying the Local Patent Rules of the District of New Jersey to forbid Stryker from asserting infringement under the doctrine of equivalents with respect to the “juxtaposed with” terms.

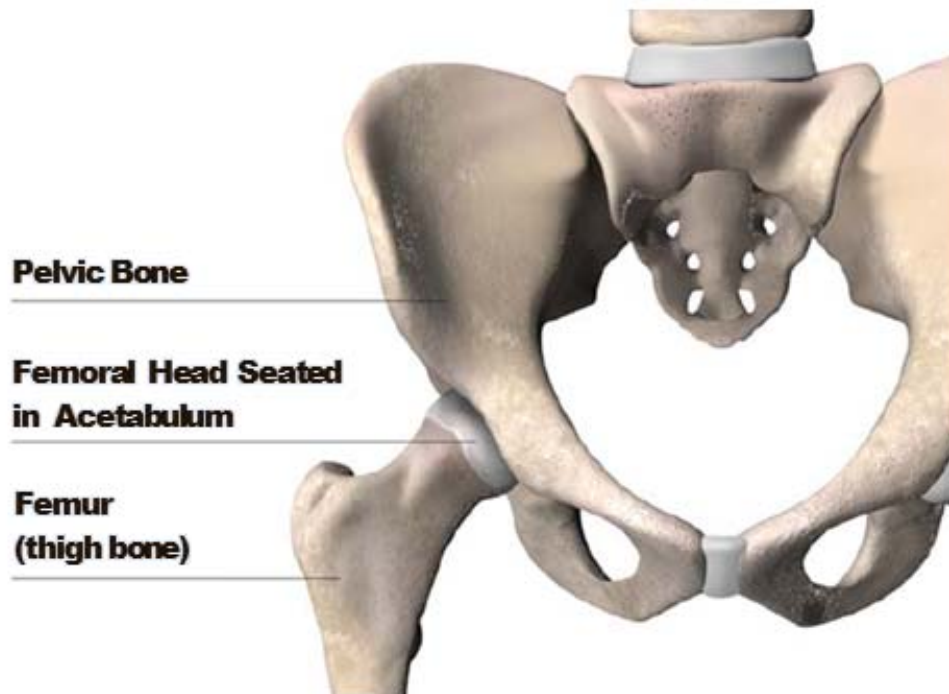
## STATEMENT OF THE FACTS AND THE CASE

### A. The basics of total hip replacement

In the United States, over 300,000 total hip replacements are performed every year. These procedures provide relief to patients whose natural hip joints have been severely damaged by debilitating condi-

tions, such as fractures or arthritis, that make it difficult or impossible to walk, or sometimes even to sit or stand.

A natural hip joint is comprised of two parts—a “ball” and a “socket.” The “socket” (also known as the “acetabulum”) is a concave surface in the pelvic bone. To form the joint, the socket receives the top end of the thigh bone (or “femur”), which is sometimes called the “femoral head” and acts as the “ball” in the ball-and-socket joint. Inserted into the socket, the ball can rotate and swivel, allowing the thigh bone to move while remaining attached to the pelvic bone.



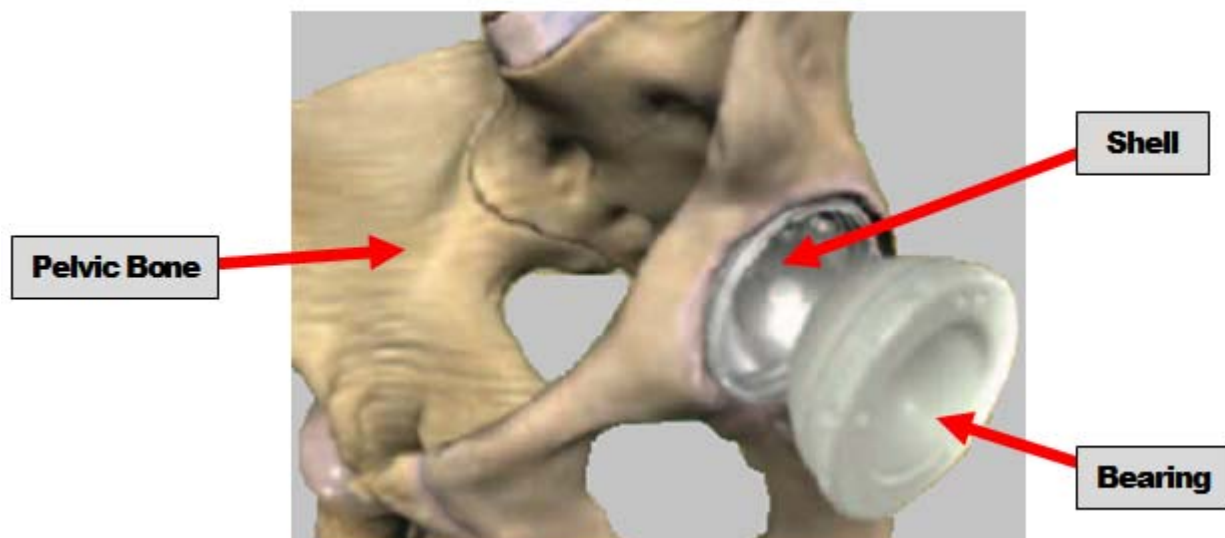
During a “total” hip replacement procedure, a surgeon replaces both parts of the ball-and-socket mechanism. Artificial components are



substituted for the original femoral head (ball) and the acetabulum (socket). In a “partial” hip replacement, an artificial ball is implanted, but the natural socket remains.

Although the ‘243 patent focuses on the design of the new socket, it is helpful to understand how a surgeon implants both the new socket and the new ball.

*First*, the natural cup-shaped socket is replaced by a new “shell.” With a concave shape like the natural acetabulum, the shell is fastened into the old socket area. But instead of inserting the femoral ball directly into the shell, the new shell first receives what is called a “bearing,” which also has a cup shape and fits securely within the shell.



The bearing does not merely rest in the shell; it must be secured

there. And it is the design of that securement mechanism that is the focus of the '243 patent.

*Second*, after implanting the artificial socket, the surgeon implants the new “ball.” To form the new ball, the top end of the thigh bone is removed and replaced with a new, artificial ball-shaped end that is attached to the remaining thigh bone by a “stem.” Once the stem is inserted into the thigh bone and secured, the ball can be received within the cavity of the secured bearing.



In this manner, the “ball-and-socket” configuration of the natural joint is replicated.

## **B. The prior art and the '243 patent**

As noted, for an artificial hip to work, it is critical that the bearing is secured to the shell. But depending on the needs of the patient, bearings can be made of different materials, including ceramic, metal, or

plastic (such as polyethylene). Before the invention claimed in the ‘243 patent, shells could receive and secure *either* a hard (ceramic or metal) bearing *or* a soft (plastic) bearing—but not both. *See* A87 col. 1:11–67. This is because the differing characteristics of the materials require that the bearings be secured or “locked” into the shell by different mechanisms. Before the ‘243 patent, it was not possible to equip a shell with multiple locking options to accommodate either a hard or soft bearing. There was no universal shell. *See id.*

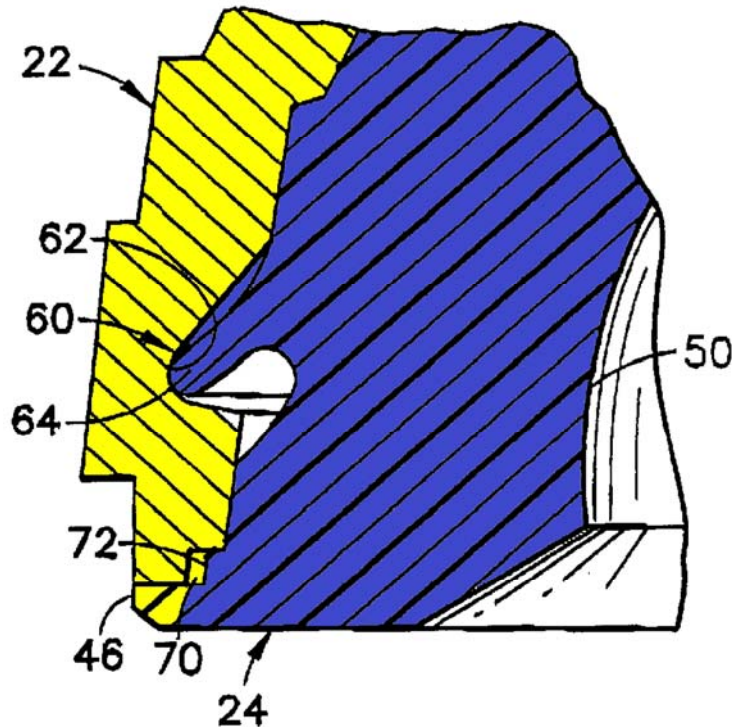
The ‘243 patent changed all that—claiming a novel *dual-locking* or *universal* configuration that allows a single shell to accommodate any type of bearing. *Id.* col. 1:38–67. Based on this novel arrangement, the ‘243 patent discloses, *inter alia*, the following locking mechanisms:

- a “rib and groove” locking mechanism for soft bearings (A87 col. 2:41–63; A88 col. 3:1–19, col. 3:20–41; A89 col. 5:21–41; A91 col. 9:22–41, col. 10:1–30; A74, Fig. 1; A76, Figs. 4–6; A81–83, Figs. 16–20; A97–98, claims 20, 25, 35–51; A99, claims 52–55; A94–95, claims 27–29, 31–32; A1691–92, parent application claims 16–18; A1694–95, parent application claims 22–23);

- a two-piece, tapered locking mechanism in which a hard bearing locks directly into the shell (A87 col. 2:41–63; A87 col. 2:64–67; A88 col. 3:1–41; A89 col. 6:20–35; A91 col. 10:51–57; A94–95, claims 27–32; A97–98, claims 20, 25, 35–37, 39–48; A99, claims 53–55; A1691–92, parent application claims 16–17, 19; A1694–95, parent application claims 22–23);  
*and*
- a three-piece, tapered locking mechanism in which a hard bearing is secured within a protective “sleeve” that, in turn, locks with the shell (A87 col. 2:1–40; A89 col. 6:36 – A90 col. 7:7; A90 col. 7:35–65; A90 col. 8:6–45; A91 col. 10:58 – A92 col. 11:65; A77, Fig. 7; A78–80, Figs. 9–15; A84–86, Figs. 22–26; A92–94, claims 1–19; A94–95, claims 27–32; A97–99, claims 20, 25, 35–37, 39–51, 53–55; A1687–92, parent application claims 1–17, 19; A1693–95, parent application claims 20–23).

***Rib and Groove.*** The first locking mechanism, called a “rib and groove,” is shown in the following figure from the ‘243 patent. The rib

(64) of the soft bearing (24—on the right, shaded blue) snaps into the groove (62) of the shell (22—on the left, shaded yellow):



A76, Fig. 4; see also A89 col. 5:26–41. This rib-and-groove mechanism is suitable for plastic bearings, which are relatively soft and pliable.

***Two- and Three-Piece Securement Tapers.*** Bearings of harder materials call for a different approach. Specifically, ceramic and metal bearings can be secured in several ways—including by cement or by using a “taper,” which can secure the bearing within the shell by locking together complementary surfaces that are designed to mate with one another. A89 col. 6:20–27. The ‘243 patent describes “mating tapered surfaces” as “[o]ne of the most effective, convenient, mechanically sim-

ple and easily used ... mechanisms available for securing together mechanical components, where neither component is constructed of a resilient material such as the material of [a] plastic bearing member[.]” *Id.* Recognizing the power of the taper mechanism, the patent teaches both a two- and a three-piece tapered approach. (A87 col. 2:41–63; A87 col. 2:64–67; A88 col. 3:20–41; A87 col. 2:1–40; A89 col. 6:40 – A90 col. 7:7; A90 col. 7:37–65; A77, Fig. 7; A78–80, Figs. 9–15; A84–86, Figs. 22–26; A92–95, claims 1–19, 27–32; A97–99, claims 20, 25, 35–37, 39–51, 53–55; A1687–92, parent application claims 1–17, 19; A1693–95, parent application claims 20–23).

Central to the ‘243 patent is a “universal” shell which accommodates *all* of these locking mechanisms. With this menu of options available, patients no longer face the risks and inefficiencies associated with prior art devices. Mid-surgery—indeed, even after implanting the shell—a surgeon can choose a bearing made of the material that is most suitable for the patient without worrying about whether the shell can accommodate it. A73 at Abstract. As a result, surgeons are no longer limited to using a pre-selected bearing, but can react to information gleaned about a patient’s condition *during* the operation and tailor the

implant accordingly. *Id.* What is more, a universal shell is advantageous in future operations because it allows patients to receive new bearings made of any material without requiring surgeons to remove and replace the old shell. *See* A87 col. 1:33–67; A1923.

In short, the universal shell claimed in the ‘243 patent gives physicians a “greater range” of choice and enables them to better “accommodate the needs of a particular patient[.]” A87 col. 1:27–32.

The industry took notice. S&N, Wright, and Zimmer each incorporated Stryker’s patented technology into their own infringing products. Stryker filed suit to protect its ownership of the powerful invention taught by the ‘243 patent.

### **C. The district court adds new claim limitations**

Following a *Markman* hearing, the district court issued its interpretation of nine disputed terms from the ‘243 patent. *See* A16–46; A68–70. This appeal involves two sets of claim language: (i) language related to the design of “securement tapers”; and (ii) language related to the phrase “juxtaposed with,” which simply refers to where the rib-and-groove mechanism (for use with soft bearings) is located in relation to

the securement tapers (for use with hard bearings).<sup>1</sup>

As to both sets of claim language, asserted independent Claim 41 is representative. The following portion of Claim 41 (added in re-examination) describes the securement tapers—first, the taper on the “internal” surface of the “shell,” and then the complementary taper on the outer surface of the “bearing”:

an internal securement taper on the internal surface **within the cavity of the shell member, the internal securement taper** extending axially and being **compatible with the outer securement taper of the at least one second internal bearing member** of the plurality of internal bearing members to axially secure the second internal bearing member within the shell member

A98 col. 3:3–10 (emphasis added). Thus, the claims at issue here cover a “shell” with an angled region on its inner surface (the “taper”), and a “bearing,” with its own angled region (also called a “taper”) on its outer surface. These two angled regions are “compatible,” such that they “secure” the bearing “within the shell.” *Id.*

In the next clause, Claim 41 describes how the shell’s “internal se-

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<sup>1</sup> The district court also construed certain claim terms found in U.S. Patent No. 6,610,097, which are not at issue here. That patent was asserted against Stryker in a counterclaim by another defendant, DePuy Orthopaedics, Inc., in a case which was dismissed by stipulation in June 2014. A1075–76.



curement taper” is “juxtaposed with” the “securement recess” of the rib-and-groove locking mechanism (recited earlier in the claim):

**the securement recess and the internal securement taper being juxtaposed with one another** and placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other

*Id.* col. 3:11–20 (emphasis added). Here, the claim explains that the shell’s groove (the “securement recess”) that receives the rib on the plastic bearing is positioned in the shell such that the “effectiveness ... is maintained” of both the groove and the taper (the “internal securement taper”). The two features—designed to be used with different bearings—are placed so they do not compromise each other.

**“Securement taper.”** Rather than interpret the “securement taper” language according to its plain terms, two of the defendants (Wright and Zimmer) urged the district court to add a limitation—requiring that the “bearing” not only have a “taper” that is compatible with the complementary “taper” of the shell, but also contain a wholly separate “*sleeve*” structure that fits between the bearing and the shell. In other words, Wright and Zimmer insisted that the claims at issue here, which also cover two-piece assemblies (shell and bearing), be con-

strued as requiring three-piece assemblies (shell, bearing, *and* sleeve).

Notably, S&N did not join Wright and Zimmer in asking the court to insert a “sleeve” requirement—doubtless because, unlike Wright and Zimmer, S&N’s product actually *has* a sleeve. After all, while adding a sleeve limitation would enable Wright and Zimmer *not* to infringe, adding a sleeve requirement would have *reinforced* S&N’s literal infringement of the asserted claims.

In any event, despite the lack of any “sleeve” language in the claims at issue here, the district court imported a “sleeve” requirement as follows—making the claims require three pieces:

Claim Language	Stryker’s Construction	District Court’s Construction
<p><i>Claim 41:</i></p> <p>“the internal securement taper extending axially and being compatible with the outer securement taper of the at least one second internal bearing member of the plurality of internal bearing members to axially secure the second internal bearing member within the shell member”</p>	<p>No construction necessary</p>	<p>“<b>requires</b> that the internal taper of the shell mates with the external taper of a <b>metallic securing member (i.e. sleeve)</b> secured to and separate from the bearing member.”</p>

See A44–45, 46.<sup>2</sup>

As a result of this new “sleeve” requirement, Stryker could no longer sustain its burden of proving infringement by Wright or Zimmer, which sell only two-piece, sleeveless products.

**“Juxtaposed with.”** As explained, the interior of the claimed shells incorporate two distinct locking mechanisms. *First*, the shell has a “recess” that accepts a protruding rib on a plastic bearing. *Second*, the shell contains a tapered surface that is compatible with a corresponding taper on the exterior surface of a metal or ceramic bearing. It is critical that these locking mechanisms both work. If one compromises the other, the shell is not truly universal—indeed, it is not functional. Thus, the claims of the ‘243 patent explain that the “recess” and the “taper” are “juxtaposed with one another and placed at relative locations such that the effectiveness of each ... is maintained while in the presence of the other[.]” A98 col. 3:11–20 (claim 41). As Stryker explained to the district court, the ordinary meaning of “juxtaposed” shows that the recess must be “positioned nearby” the taper.

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<sup>2</sup> The district court added this same “sleeve” requirement to separate (and different) language in asserted independent claims 20, 27, and 53 as well. See A44.

Instead, Defendants asked the district court to hold that the recess must be “essentially midway” along the taper, a construction the district court adopted as follows:

Claim Language	Stryker’s Construction	District Court’s Construction
<p>Claim 41:</p> <p>“the securement recess and the internal securement taper being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other of the securement recess and the internal securement taper”</p>	<p>“the securement <b>recess and</b> the internal securement <b>taper being positioned nearby one another</b> and placed at relative locations such that the ability of each of the securement recess and the internal securement taper to secure the bearing in the shell is maintained while in the presence of the other of the securement recess and the internal securement taper”</p>	<p>“the <b>recess is essentially midway along the taper</b> such that the effectiveness of each is not compromised”</p>

See A33; A39; A1005 (emphasis added).<sup>3</sup> With this new addition to the claim, Stryker could no longer prove literal infringement by *any* of the Defendants—because none of their products literally position the recess

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<sup>3</sup> The district court also used this language to define separate (and different) language in asserted independent claims 20, 27, and 53. See A32–33.

“essentially midway” along the taper. Thus, Stryker was left to show infringement as to the “juxtaposed with” limitation solely under the doctrine of equivalents.

**D. The district court allows Defendants to proceed to summary judgment**

Rather than take its case to trial solely against S&N on these artificial and erroneously narrow constructions, Stryker sought consent to a global judgment that would allow an immediate appeal against all parties. As to Wright and Zimmer, the case was already effectively over because neither practices the new “sleeve” limitation, literally or by equivalency. Accordingly, Stryker offered Wright and Zimmer a stipulated final judgment of non-infringement under that construction. A6.

As to S&N, however, the case was not necessarily over because S&N *did* practice the “securement tapers” limitation, even when construed to require a separate “sleeve.” So Stryker offered S&N a stipulated final judgment of noninfringement based on the new “essentially midway” limitation. *See id.* But, because Wright and Zimmer also wanted a judgment that they did not infringe the “essentially midway” term (which they were not entitled to), Wright and Zimmer refused to agree and blocked Stryker’s efforts to obtain a final judgment by con-

sent of all the parties. Thus, Stryker was forced to move for entry of final judgment or, alternatively, entry of partial final judgment under Rule 54(b), in order to promptly appeal the relevant claim constructions against the relevant parties. A6–7.

The district court denied Stryker’s motion for entry of judgment, and instead allowed Defendants to seek summary judgment on the basis of both of the questioned constructions—before the parties had even conducted significant substantive fact or expert discovery and without any continuing live controversy between Stryker and Wright or Zimmer (because Stryker no longer asserted infringement, as it could not prove infringement under any theory as to the added “sleeve” limitation.) *See* A7.

Without opposition from Stryker (which maintained only that the construction was erroneous), Wright and Zimmer moved for summary judgment of non-infringement on the basis of the new “sleeve” requirement. *See* A10. Wright and Zimmer also sought summary judgment on the basis of the new “essentially midway” requirement. *See id.* For its part, S&N sought judgment solely on the “essentially midway” construction. *Id.* n.3. Stryker conceded that it could not prove literal in-

fringement of that term by any of the Defendants (given the court's claim construction), but urged that each Defendant infringed the “essentially midway” construction under the doctrine of equivalents and, in support, submitted detailed expert declarations. *See* A1237–70; A1431–66; A1627–60.

On November 24, 2014, the district court granted judgment in favor of Wright and Zimmer because they did not practice the “sleeve” requirement. A10. As to the “essentially midway” requirement, the court ruled that Stryker could not even assert such infringement against any Defendant because: (i) Stryker acknowledged that it could not prove literal infringement of that term; and (ii) as discussed in the next section, it ruled that claims for infringement under the doctrine of equivalents were unavailable to Stryker for procedural reasons arising from the District of New Jersey's Local Patent Rules. A13.

**E. The district court bars Stryker from asserting infringement under the doctrine of equivalents**

As discussed above, the manner in which Defendants infringe the “essentially midway” construction was not at issue in this case until *after* Stryker conceded that it could no longer prove infringement by Wright and Zimmer of the new “sleeve” requirement and *after* Stryker

had proposed a final judgment that also ended its case against S&N. Infringement by equivalency first became an issue when Defendants demanded the opportunity to prove at summary judgment that they did not infringe the new “essentially midway” requirement. But, according to the district court, Stryker could not claim infringement under the doctrine of equivalents anyway as a result of a complaint raised by Defendants concerning Stryker’s infringement contentions. *Id.* According to the district court, as “a matter of fairness[.]” Stryker was not allowed “to assert an infringement theory at the summary judgment stage that had not been asserted with any specificity at any prior point in the litigation.” *Id.* But it is *that* ruling that was unfair.

The Local Patent Rules of the District of New Jersey require a patentee asserting infringement to “serve on all parties a ‘Disclosure of Asserted Claims and Infringement Contentions.’” District of New Jersey, L. Pat. R. 3.1. That set of initial disclosures must state, among other things, “whether each limitation of each asserted claim is alleged to be literally present or present under the doctrine of equivalents in the Accused Instrumentality[.]” L. Pat. R. 3.1(e). Stryker served its infringement contentions on May 17, 2012, and set out the manner in



which each Defendants' accused product(s) literally infringed the asserted claims of the '243 patent. A5. In those contentions, Stryker also stated that, "[i]n the event that a claim limitation is deemed to be missing under a literal infringement analysis (e.g., due to claim construction), Stryker reserves the right to demonstrate the presence of a substantial equivalent of such an element and pursue infringement claims under the doctrine of equivalents." A7. This was consistent with the New Jersey Local Rules, which acknowledge that good cause to amend contentions can include "a claim construction by the Court different from that proposed by the party seeking amendment[.]" D.N.J. L. Pat. R. 3.7(a); *see also Int'l Dev. LLC v. Richmond*, 2011 WL 149859, at \*3 (D.N.J. Jan. 18, 2011) (amendment allowed because patentee "did not know they would need to amend until after the Court issued the *Markman* order.").

In July 2013, over a year after Stryker served its infringement contentions, the district court issued its claim construction opinion adding the new "sleeve" and "essentially midway" limitations. A16. As noted, the new "sleeve" requirement meant that Stryker could not prove infringement against Wright and Zimmer; and the new "essentially

midway” limitation meant that Stryker’s literal infringement case was over as to all Defendants. *See* A6, A10. Rather than litigate against S&N alone—and proceed solely under the doctrine of equivalents as to the “essentially midway” construction—Stryker offered a stipulated judgment of non-infringement in favor of S&N on that ground. *See* A6.

After issuing its claim construction opinion, even the district court recognized that the case was over and declined to schedule discovery. A1073–74 (scheduling order terminating discovery). Accordingly, Stryker declined to seek leave to amend its infringement contentions because it was instead attempting in good faith to end the case efficiently and seek an immediate appeal, and because the district court had signaled that the case was over by declining to set a schedule for continued proceedings.

The district court punished Stryker for that choice twice over. On the one hand, it held that it was *too early* for Stryker to appeal its “essentially midway” construction and instead allowed Defendants to seek summary judgment on that term. On the other hand, it held that it was *too late* for Stryker to assert infringement of the “essentially midway” term under the doctrine of equivalents. Incredibly, according to the

court, this was “a matter of fairness[.]” A13.

### **SUMMARY OF ARGUMENT**

By adding requirements and limitations not found in the asserted claims, the district court disregarded a host of bedrock principles of claim construction. Further, by applying its local rules to bar Stryker from arguing an otherwise meritorious doctrine of equivalents theory in light of one of the newly-imported limitations, the district court abused its discretion. Reversal is warranted in each instance.

In section I, Stryker details how the district court erred by ignoring the plain language of the construed claims—which require only that an “internal securement taper” of the shell be compatible with an “outer securement taper” of the bearing—to require that a third, entirely new structure (a sleeve) be placed between the claimed tapers. The relevant claim language contains no reference to a “sleeve” or any analogous structure and the district court improperly imported the limitation from an embodiment described in the specification. The court did so despite the fact that separate and unasserted claims clearly add such a requirement and despite the fact that the specification describes a two-piece embodiment—an embodiment without an intervening sleeve. It

also improvidently relied on Stryker's commercial product to determine what the court envisioned that the inventors must have "contemplated." Lastly, the district court erred by focusing on statements in the prosecution history that had nothing to do with the construed claim terms.

In section II, Stryker describes how the district court erred again by adding a new requirement that a claimed locking recess must be located "essentially midway" along the internal securement taper of the shell. This "essentially midway" limitation was imported from the "preferred embodiment" even though there is absolutely no support for the additional limitation in the language of the asserted claims. To import this new limitation, the court ignored the doctrine of claim differentiation and construed the independent claims to have identical scope as the dependent claims, which expressly describe an embodiment that has the recess "essentially midway" along the taper. A94 and A97 (claim 25); A95 (claim 32).

Finally, in section III, Stryker explains how the district court abused its discretion by applying New Jersey's local rules in a way that made it impossible for Stryker to use the doctrine of equivalents to defend itself against impromptu motions for summary judgment premised

upon the errant “essentially midway” construction. The court improperly found that Stryker was barred from arguing the doctrine of equivalents based on the July 2013 claim construction because, when Stryker served its initial contentions over a year earlier in May 2012, it did not anticipate that the court would eventually make this claim construction error. But when Stryker drafted its contentions, there was no “essentially midway” limitation in the asserted claims. Moreover, immediately after the court added the “essentially midway” requirement, the court terminated discovery concerning infringement of the asserted claims. Although even in its initial contentions Stryker expressly put Defendants on notice that, if claim construction significantly altered the patent, Stryker reserved its right to assert the doctrine of equivalents (as contemplated by the local rules), the Court found it “unfair” to let Stryker defend against a summary judgment motion that Defendants knowingly asked to bring on an incomplete record without significant fact discovery or any expert discovery. The district court’s rulings in this respect were unfair, unreasonable, and an abuse of discretion.

### **STANDARD OF REVIEW**

A district court’s claim construction is a question of law reviewed

*de novo*, with the exception that underlying factual determinations based on extrinsic evidence are reviewed for clear error. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S.Ct. 831, 841 (2015). The district court’s “essentially midway” requirement was based exclusively on its review of intrinsic evidence and is therefore reviewed *de novo*. See A32–39. Except for its consideration of Stryker’s commercial embodiment (which itself was improper), the district court’s “sleeve” construction was also based entirely on the intrinsic record and should also be reviewed *de novo*. See A44–46.

The district court’s application of its Local Rules is reviewed for abuse of discretion. *O2 Micro Int’l Ltd. v. Monolithic Power Sys., Inc.*, 467 F.3d 1355, 1364-65 (Fed. Cir. 2006).

A district court’s grant of summary judgment is reviewed according to the law of the regional circuit. *Teva Pharm. Indus. Ltd. v. Astra-Zeneca Pharm. LP*, 661 F.3d 1378, 1381 (Fed. Cir. 2001). The Third Circuit “review[s] an order granting summary judgment *de novo*, applying the same standard” used by the district court. *Azur v. Chase Bank, USA, Nat’l Ass’n*, 601 F.3d 212, 216 (3d Cir. 2010) (quotation omitted). Summary judgment is appropriate when, drawing all justifiable infer-

ences in the nonmovant’s favor, “there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986).

## ARGUMENT

### **I. The district court erroneously imported a “sleeve” limitation into the asserted claims**

The district court erred in requiring that the claims encompassing two-piece prosthetic hip assemblies contain a third “sleeve” component. Along the way, it committed a host of textbook errors. To reach its construction severely restricting the scope of the ‘243 patent, the district court (a) ignored the unambiguous language of the claims, (b) ignored the fact that unasserted claims expressly require a “sleeve,” (c) read into the asserted claims limitations from embodiments disclosed in the specification, (d) misinterpreted the prosecution history, and (e) relied upon the commercial products currently offered by Stryker. Aside from its reliance on Stryker’s commercial products (which, as discussed below, is legally irrelevant), the district court considered no extrinsic evidence and its construction therefore warrants *de novo* review.

**A. The asserted claims say nothing about a sleeve**

The district court violated the most fundamental rule of claim construction—which is giving effect to the language of the claims. That language never mentions a “sleeve” or even the concept of a sleeve.

It is a “bedrock principle” of patent law that “the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quotation omitted). It is “unjust to the public, as well as an evasion of the law” to construe claims “in a manner different from the plain import” of the words used in those claims. *Id.* (quoting *White v. Dunbar*, 119 U.S. 47, 52 (1886)). Accordingly, claim construction starts with the words of the claims themselves, which “are generally given their ordinary and customary meaning” and which can “provide substantial guidance as to the meaning of particular claim terms.” *Id.* at 1312, 1314 (quoting *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

The district court turned the law of claim construction on its head by focusing on what it divined the “inventor[s] contemplated” instead of what the claim language itself required. A46; *ArcelorMittal France v.*



*AK Steel Corp.*, 700 F.3d 1314, 1321-22 (Fed. Cir. 2012) (“an inventor’s subjective understanding of patent terminology is irrelevant to claim construction”). Here, the claim language is unambiguous, contains no hint of a “sleeve” requirement, and did not require construction at all, let alone the insertion of a wholly unsupported “sleeve” limitation.

Claim 41 is exemplary, providing for a “shell member” with “an internal securement taper” on its internal surface. A97–98. The language the court construed deals with the interaction of that taper with the “outer securement taper” of the “**bearing**” (i.e., not necessarily the outer securement taper of a “sleeve”):

the internal securement taper [of the shell] extending axially and being compatible with the **outer securement taper of the at least one second internal bearing** member of the plurality of internal bearing members to axially secure the second internal bearing member within the shell member”

A98 col. 3:3–10 (emphasis added). There is no reference to a sleeve. There is a bearing that has an outer securement taper and a shell that has an internal securement taper. Those tapers are compatible with one another such that they “secure the ... bearing member within the shell[.]” *Id.* There is no ambiguity here. The district court’s construc-

tion inserts a sleeve between the shell and the bearing where none is required by the plain language of the claims. The court's construction excludes this common-sense reading by requiring that there be a protective "sleeve" between the shell and the bearing. *See* A46. This was error.

### **B. Other claims *do* require a "sleeve"**

Not only did the court ignore the plain language of the asserted claims, which do *not* require a sleeve, it also ignored other unasserted claims, which *do*. That, too, was reversible error. "There is a rebuttable presumption that different claims are of different scope." *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1326 (Fed. Cir. 2003). And this Court "has made clear" that, "when a patent claim 'does not contain a certain limitation and another claim does, that limitation ***cannot be read into*** the former claim in determining either validity or infringement.'" *Id.* (quoting *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc)) (emphasis added).

That is the situation here, where the district court itself acknowledged "that 'three-piece' assemblies are expressly claimed in unasserted claims of the '243 Patent.'" A46. Indeed they are. For example, unas-

serted claim 1 explicitly calls for “a metallic securing member”—i.e., a sleeve—which acts as a protective buffer between “a bearing member” and “a shell member.” A93 col. 3:9–15. As claim 1 states, it is the “metallic securing member”—not the bearing—that is “for reception within the cavity of the shell[.]” *Id.*

Thus, the ‘243 patent contains a set of claims covering two-piece assemblies (like claim 20 and the other asserted claims), and a separate set covering only three-piece assemblies (like claim 1 and other unasserted claims). Asserted claim 20 covers two-piece assemblies—with the two pieces underlined and numbered as follows:

20. [A] *An assembly having a shell member* <sup>1</sup> [for use in an acetabular cup assembly having] and an internal bearing member <sup>2</sup> for selective securement within the shell member

A97.

By contrast, unasserted claim 1 covers a three-piece assembly, with the three pieces underlined and numbered as follows:

acetabular cup assembly comprising:

**3** a metallic securing member for reception within the cavity of the shell member, the securing member extending between an upper end and a lower end and including an external securing element and an internal receptor element;

an external receptor element on the bearing member, the external receptor element and the internal receptor element having interengagable structures compatible with the securement characteristics of the selected bearing member such that upon engagement of the external receptor element with the internal receptor element the internal bearing member is secured to the securing member with the lower end of the bearing member spaced upwardly a prescribed distance from the lower end of the securing member; and **2**

an internal securing element within the cavity of the shell member, the internal securing element being essentially complementary to the external securing element of the securing member such that upon selective engagement of the external securing element with the internal securing element the securing member is secured selectively within the shell member; **1**

A93.

When the inventors required a sleeve, they did so by expressly referring to a “metallic securing member” in the language of the claims. *See id.* The asserted claims contain no such limitation and should not be construed as containing such a limitation. *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1305 (Fed. Cir. 1999) (“Had Rodime intended or desired to claim thermal compensation as a function of the positioning means in the asserted claims, it could have done it explicitly, as in claim 11. The absence of any such explicit language, however, shows that claims 3, 5, and 8 do not include the function of thermal compensa-

tion.”).

**C. The district court wrongly imported a “sleeve” limitation from the specification, which it misread**

Setting aside the crystal-clear, controlling language in the asserted claims themselves, the district court erroneously imported the “sleeve” requirement because “a review of the patent specification reveals that the inventor[s] contemplated ... the use of a ‘metallic securing member’ or a sleeve to assemble hard bearings to the shell.” A46 (citing A87 col. 2:1–18 and A90 col. 8:6–14). But the fact that the specification makes reference to a sleeve does not mean that all claims must be construed to require a sleeve. What controls is the language of the particular claim. Moreover, the district court’s reliance on what it perceived to be what “the inventor[s] contemplated” was not only incorrect, it was an inquiry that this Court has deemed “irrelevant.” *ArcelorMittal*, 700 F.3d at 1321-22.

And here, there was no testimony in the record from the inventors indicating that they believed a sleeve was required. The district court relied only upon the preferred embodiment in the specification to conclude what the inventors “contemplated” and to import a sleeve requirement that appears nowhere in the text of the construed claims.

See A46. In doing so, it committed “one of the cardinal sins of patent law[.]” *Phillips*, 415 F.3d at 1320 (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001)). This Court has repeatedly warned courts “not to import” limitations from the examples used in the specification into the claims themselves. *Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 906 (Fed. Cir. 2005); *Bayer AG v. Biovail Corp.*, 279 F.3d 1340, 1348 (Fed. Cir. 2002). This Court has also noted that the “danger of improperly importing a limitation is even greater when the purported limitation is based upon a term not appearing in the claim.” *Amgen*, 314 F.3d at 1325; *see also SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (“[A] particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”). But that is *exactly* what the district court did here.

Even worse, the district court’s interpretation of the specification was inaccurate. According to the court, an example of the inventors “contemplating” a three-piece assembly appears in Column 2 of the specification, lines 1–18. A46. There, the specification describes how

certain objects and advantages of the invention are attained with “an acetabular cup assembly having **[1]** an external shell ... and **[2]** an internal bearing member ... [and] comprising: **[3]** a metallic securing member[.]” A87 col. 2:1–18 (numbering added). While it is true that this portion of the specification (like the unasserted claims discussed above) does discuss three-piece assemblies using a sleeve, the court ignored other disclosures in the specification regarding two-piece assemblies.

The specification includes at least three instances in which “the present invention” is described with no mention of a “metallic securing member” or a “sleeve”:

- “a method for implanting an acetabular cup assembly having **[1]** an external shell member ... and **[2]** an internal bearing member”;
- “[**1**] a shell member for use in an acetabular cup assembly having **[2]** an internal bearing member”;
- “a kit of component parts for assembling an acetabular cup assembly having **[1]** an internal bearing secured within **[2]** a shell member[.]”

A88 col. 3:20–23; A87 col. 2:41–63; A87 col. 2:64–67 (numbering added in each case). The district court turned a blind eye to all of these. Indeed, the claims as filed in the original application for the ‘243 patent contained both sets of claims—a set of claims that required a sleeve (claims 1 and 20) and a set of claims that did not (claims 16 and 22). A1687; A1691–92; A1693–95.

Further, the court overlooked language in the specification carefully distinguishing between sleeve and sleeveless configurations. Specifically, the two-piece approach is described as “securing the selected internal bearing member within the shell member by ***engaging the selected internal bearing member*** with the corresponding” surface on the shell. A88 col. 3:37–41 (emphasis added). In contrast, the three-piece “preferred embodiment” describes engagement “between ***the sleeve*** 100 and the shell member 22 as the sleeve 100 is inserted into the shell member 22[.]” A90 col. 7:5 and 7:19–20.

In short, the specification directly contradicts the notion that a sleeve is always “required” under the invention “contemplated” by the inventors and set forth in the specification. Instead, like the claims, the specification describes ***both*** two- and three-piece assemblies. The dis-



strict court simply jettisoned the two-piece assemblies from the patent by selectively reading the specification.

But even if the specification *only* disclosed embodiments with a sleeve (it does not), adding a sleeve limitation to the claims would still have been inappropriate. This Court has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Phillips*, 415 F.3d at 1323; *see also Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1371 (Fed. Cir. 2002) (“[A]dditional limitations from these figures cannot be imported into the unambiguous claim language.”). Either way, the court’s construction was incorrect.

#### **D. The district court wrongly applied the prosecution history**

Nor was it any answer to point to “documents disclosed during the prosecution of the patent,” which supposedly showed that “the contemplated ceramic or metal liner could only be assembled with the shell by using adaptor sleeves.” A46. Rather, the prosecution history firmly establishes that the ‘243 patent contains claims which require three-pieces and other claims which do not necessarily require a sleeve com-

ponent. See A1715–19; A1725–28; A1731–34; A1751–56; A1764; A1768–72; A1838–40; A1858–59; A1865–80; A1915–27; A1930; A1936–56; A1988–90; A1992–93; A1997; A2006–13; A2015–16; A2044–46; A2071–79; A2101–02; A2110; A2149–53; A2155–64; A2166–71; A2173–81; A2183–87; A2616–71.

To limit claims, a statement made during prosecution must amount to a “clear and unmistakable” disclaimer of claim scope. *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed Cir. 2003). Context is particularly important when evaluating statements made during prosecution. See, e.g., *Digital-Vending Servs. Int’l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1277 (Fed. Cir. 2012) (“When the inventors’ statements ‘are considered in the context of the prosecution history as a whole, they simply are not clear and unmistakable enough to invoke the doctrine of prosecution history disclaimer.’”) (quoting *Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1343 (Fed. Cir. 2009)). The prosecution history here does not even approach the “clear and unmistakable” disclaimer standard.

The district court pointed to a declaration submitted during the re-examination of the ‘243 patent in which Stryker’s Vice President de-

scribed evidence indicating that Stryker's inventors conceived and reduced to practice the invention claimed in the '243 patent before the publication of a specific prior art reference, German Patent DE 196 54 409 C1 ("Worsch"). A46 (citing A2140–42). That declaration was submitted as part of a successful effort to prove that Stryker invented the claimed invention before Worsch was published—and that the '243 patent is therefore valid even in light of Worsch (which was published on April 23, 1998, a few weeks before the '243 patent's parent application was filed on May 22, 1998). A2155–57; A2139–43.

According to the district court, the declaration "conceded that the contemplated ceramic or metal liner could only be assembled with the shell by using adaptor sleeves." A46. The declaration contains no such "concession." *See* A2139–43. In fact, the declaration cited by the district court did nothing to limit the claims. The declaration and documents submitted with it describe the preferred embodiment of the invention which was the commercial product that Stryker was developing. That Stryker believed—and continues to believe—that the best embodiment of the invention contains a sleeve that protects against damage caused by (or to) bearings made of ceramic or metal, does nothing to

limit the scope of the claims advanced before the PTO. It was error for the district court to conclude otherwise.

This is particularly so in light of a declaration submitted by one of the named inventors during the re-examination of the '243 patent. In that declaration, inventor Nicholas Dong described evidence of the reduction to practice of the claimed invention. A2047–49. This evidence included a “purchase order” for “a shell including a female taper and a groove juxtaposed with the taper” and “a first internal bearing member with a male taper compatible with the shell’s female taper.” A2048; *see also* A2050–55. In another declaration, Mr. Dong further described the creation of prototypes which contained “a shell that included a taper and a groove juxtaposed with the taper” and “a first internal bearing member with a taper compatible with the shell’s taper[.]” A2114. There is no mention of a sleeve or any similar structure.

Furthermore, the district court failed to consider the manner in which the prior art was consistently treated throughout the prosecution history. When the PTO’s Examiner issued rejections to the three-piece claims, the prior art asserted was three-piece art; when the Examiner issued rejections to the broader two-piece claims, the prior art asserted

was two-piece art. *See* A1715–19; A1725–28; A1731–34; A1751–56; A1764; A1768–72; A1838–40; A1858–59; A1865–80; A1915–27; A1930; A1936–56; A1988–90; A1992–93; A1997; A2006–13; A2015–16; A2044–46; A2071–79; A2101–02; A2110; A2149–53; A2155–64; A2166–71; A2173–81; A2183–87; A2616–71. The district court also ignored portions of the prosecution history which clearly indicate that the asserted claims do *not* necessarily require a sleeve. The Examiner drew a distinction between those claims requiring a sleeve (allowing those claims) and those claims that did not necessarily require a sleeve (initially rejecting those claims). *Compare* A1954 (allowing three-piece claim because “prior art fails to disclose or fairly suggest ... a bearing member having an outer surface of metal and an inner ceramic surface”) *with* A1939 (preliminarily rejecting another claim because prior art disclosed a “bearing member” with a “ceramic bearing surface” that is “tapered ... for interlocking”); *see also* A1878–79 (allowing three-piece claim because relevant prior art did not show “a metal securing sleeve”).

Unlike what the district court did here, a person of ordinary skill in the art would interpret the claim terms on the basis of the entire intrinsic record and in “its full context, not on the basis of snippets lifted

out of context.” *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1576 (Fed. Cir. 1997) (citation omitted).

**E. The district court should not have relied on Stryker’s commercial embodiment**

Finally, the district court asserted that, during the *Markman* hearing, Stryker had “conceded that” it does not sell a commercial embodiment “where a hard bearing could be secured to the shell without a sleeve[.]” A46. For the reasons explained in this section, the district court’s reliance on this “concession” was improper. But, even more fundamentally, Stryker made no such “concession.” The transcript portion cited by the district court in support of its “concession” finding relates to the ‘243 patent’s *preferred* embodiment, *not* Stryker’s *commercial* embodiment. Compare A46 with A179, Tr. 174:5–25.

The district court’s reliance on the fact that Stryker commercialized what it described as a preferred embodiment was textbook error. *E.g.*, *Int’l Visual Corp. v. Crown Metal Mfg. Co.*, 991 F.2d 768, 771-72 (Fed. Cir. 1993) (district court’s claim construction “that the claims are limited to a plastic housing” was erroneous where it “apparently focused on the ... commercial embodiment of the ‘780 patent, which has a plastic housing”); *see also SmithKline Beecham Corp. v. Apotex Corp.*, 403

F.3d 1331, 1339 (Fed. Cir. 2005) (rejecting claim construction that “limits” a claim “to its commercial embodiments”).

\* \* \*

The plain language of the claims at issue controls here. Those claims have no “sleeve” requirement; and the specification, prosecution history, and commercial embodiment do not remotely show otherwise.

## **II. The district court erroneously imported an “essentially midway” limitation into the asserted claims**

In addition to imposing a non-existent “sleeve” requirement, the district court required that the “recess” be located “essentially midway” along the taper, when the asserted claims of the ‘243 patent contain no such requirement (in contrast to certain dependent claims). This, too, was error. In arriving at this construction, the district court considered no extrinsic evidence. Thus, its construction is entitled to no deference. *Teva*, 135 S.Ct. at 841.

### **A. There is no “essentially midway” requirement in the asserted claims**

As explained above, “claims are of primary importance, in the effort to ascertain precisely what it is that is patented.” *Phillips*, 415 F.3d at 1312 (quotation omitted). Indeed, claims “are the sole measure

of the grant[.]” *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961). Thus, “[t]his court has repeatedly and clearly held that it will not read unstated limitations into claim language.” *N. Telecom Ltd. v. Samsung Elecs. Co., Ltd.*, 215 F.3d 1281, 1290 (Fed. Cir. 2000); *see also Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1088 (Fed. Cir. 2003) (“courts may not read limitations into the claims.”); *McCarty v. Lehigh Valley R.R. Co.*, 160 U.S. 110, 116 (1895) (“[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim ... we should never know where to stop.”). That is exactly what the district court did here.

Under the asserted claims, the groove (or “securement recess”) on the inside of the shell creates a place for the rib of a soft plastic bearing to lock. In turn, that groove must be “juxtaposed with” the tapered surface of the shell, which surface creates a locking location that is compatible with the tapered surface of bearings made of harder materials.

Claim 41 is representative:

the securement recess and the internal securement taper being **juxtaposed with one another** and placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other of the securement recess and the internal securement



taper

A98 col. 3:11–20. Thus, the claims show that the locking mechanisms are arranged so as not to limit each other’s effectiveness.

Nothing in the asserted claims suggests—let alone requires—that the securement recess must be located “essentially midway” along the taper to accomplish that objective. The district court added the requirement anyway. This was error.

**B. The court imported the “essentially midway” requirement from the preferred embodiment, which is the “cardinal sin” of claim construction**

The district court found its “essentially midway” requirement in a preferred embodiment and then grafted that requirement into the claims. That error is what this Court has described as the “cardinal sin” of claim construction. *Phillips*, 415 F.3d at 1320. In cases like this, when “claim language is broader than the preferred embodiment, it is well-settled that claims are not to be confined to that embodiment.” *DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1348 (Fed. Cir. 2008).

The ‘243 patent’s specification describes the recess as “essentially midway” along the taper only twice—both times when describing the invention’s three-piece preferred embodiment:

- ***In the preferred embodiment***, the shell member 22 and the sleeve 100 are constructed of commercially pure titanium and the angle A is about 6°. Seating surface 110 includes an upper end 112 and a lower end 114 and is divided by the recess 62 into an upper segment 116 and a lower segment 118 (see FIG. 4). By placing the recess 62 ***essentially midway*** between the upper end 112 and the lower end 114, engagement of the seating surfaces 106 and 110, and the locking of the seating surfaces 106 and 110 in response to such engagement, is facilitated by virtue of the locking being accomplished along segments 116 and 118 having generally the same, and therefore maximized, axial length.
  
- ***In the preferred embodiment***, the shell member 212 and the sleeve 340 are constructed of commercially pure titanium and the angle 356 is about 60°. Seating surface 354 includes an upper end 360 and a lower end 362 and is divided by the recess 262 into an upper segment 364 and a lower segment 366. By placing the recess 262 ***essentially midway*** between the upper end 360 and the lower end 362, engagement of the seating surfaces 350 and 354, and the locking of the seating surfaces 350 and 354 in response to such engagement is facilitated, by virtue of the locking being accomplished along segments 364 and 366 having generally the same, and therefore maximized, axial length.

A90 col. 7:5–17; A92 col. 11:25–37.

With this language, the specification could not be clearer that the “essentially midway” requirement is a preferred embodiment. It says so explicitly. But the language of the asserted claims does not say “essentially midway” (although unasserted *dependent* claims do (*see infra* section II.C)). The asserted claims just say that the recess and taper are

“juxtaposed ... and placed at relative locations such that the effectiveness of each ... is maintained ... in the presence of the other[.]” *E.g.*, A98 col. 3:11–16 (claim 41).

The district court was unconcerned by this because “the only embodiment discussed in the context of the ‘243 Patent is where the recess is placed ‘essentially midway’ along the taper.” A37–38. But this Court has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Phillips*, 415 F.3d at 1323.

The district court also noted that “the patent teaches that the effectiveness of the securing elements is maintained when the recess is placed essentially midway along the taper.” A38. Although that is true, that cannot justify importing limitations from that embodiment to the claims in direct contravention of *Phillips*. 415 F.3d at 1323. Moreover, what the patent teaches is that components are best secured by maximizing the length of the taper zone (A90 col. 7:5–23), and that can be accomplished by placing the groove midway along the taper, at an edge of the taper, or not in the taper at all.

Time and again, the district court violated basic principles of

claim construction. This Court should reverse.

**C. The district court’s “essentially midway” requirement violates the doctrine of claim differentiation**

If that were not enough to reverse (and it is), the dependent claims of the ‘243 patent confirm that “essentially midway” is just *one of* the “relative locations” at which the recess can be placed. These dependent claims cannot be reconciled with the district court’s construction. “Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend.” *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1242 (Fed. Cir. 2003); *see also* 35 U.S.C. § 112, ¶ 4 (“[A] claim in dependent form shall ... specify a further limitation of the subject matter claimed.”).

Specifically, claims 25 and 32 of the ‘243 patent (which depend from independent and asserted claims 20 and 27, respectively) add only the requirement that “the recess is located essentially midway” between the upper and lower ends of the internal securing surface (i.e., the taper). A94; A95; A97. This is the *same* limitation added to the independent claims by the district court’s construction of “juxtaposed.” Thus, in violation of the doctrine of claim differentiation, the district

court deemed the independent claims to have the *exact same* scope as the dependent claims.

The district court dismissed this problem in light of the maxim that “[c]laim differentiation is a guide, not a rigid rule.” A38 (quoting *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 404 (Ct. Cl. 1967)). That is true enough, but inapplicable here because “[t]he district court’s construction would render claim language in dependent claims ... meaningless.” *Rambus*, 318 F.3d at 1093. And this Court “disfavors such a construction.” *Id.*

“Where a particular construction of an independent claim would nullify claims that depend from it, the doctrine of claim differentiation creates a *presumption that such a construction is improper.*” *Marine Polymer Techs., Inc. v. HemCon, Inc.*, 672 F.3d 1350, 1368 (Fed. Cir. 2012) (emphasis added). “This presumption is especially strong where the limitation in dispute is the only meaningful difference between an independent and dependent claim.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1374 (Fed. Cir. 2014).

Here, the “essentially midway” limitation in dependent claims 25 and 32 is the only thing that differentiates those claims from their re-

spective independent claims. A94–95; A97. Nothing in the district court’s *Markman* opinion overcomes the strong presumption that its construction is wrong. The district court devoted all of two sentences to explaining how its construction is appropriate in spite of the doctrine of claim differentiation, offering only that “the specification does not provide any additional configurations that would be effective in securing the elements in the presence of one another.” A38. That is legally insufficient.

The presumption created by the doctrine of claim differentiation “can be overcome by strong contrary evidence such as definitional language in the patent or a clear disavowal of claim scope[.]” *InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318, 1324-25 (Fed. Cir. 2012). “In other words, this presumption can be overcome only where a contrary construction is ‘dictated’—i.e., compelled—by the written description or prosecution history.” *Marine Polymer*, 672 F.3d at 1368 (quoting *Seachange Int’l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1369, 1370-72 (Fed. Cir. 2005)). Nothing like that is present here. This Court should reverse.

**D. “Juxtaposed with” does not mean “essentially midway”; it means “positioned nearby”**

In arriving at its “essentially midway” construction, the district court noted that the language containing “the terms ‘juxtaposed with’ and ‘in juxtaposition’” actually “impose[] three requirements regarding the location of the securing elements.” A36. According to the court, those requirements are that the elements must be: (1) “in juxtaposition/being juxtaposed”; (2) “placed at relative locations such that the effectiveness of the securing elements is maintained”; and (3) “in the presence of the other securing elements[.]” *Id.* (quotation omitted). It should have stopped there. That was a perfectly good construction of the disputed language.

Instead, the court faulted Stryker for proposing a construction that “does not address all of the components requiring construction[.]” A36. Not so. Stryker’s proposed construction was that the “the securement recess and the internal securement taper being *positioned nearby* one another and *placed at relative locations such that the ability of each of the securement recess and the internal securement taper to secure the bearing in the shell is maintained while in the presence of the other of the securement recess and the internal securement taper.*” A1004–05

(emphasis added). That fully addressed all three of the court’s requirements.

Moreover, a person of ordinary skill in the art would readily understand the term “juxtaposed with” in the claim language to mean that the first and second securement elements are “positioned nearby” one another. The plain import of the claims supports no other construction of these terms. Furthermore, the dictionaries uniformly show that what “juxtaposed with” means is “close to one another,” “side by side,” “close together,” and “near, beside, or close to.” *E.g.*, A2189–90, A2192; A2230–32; A2233–35; A2236–38; A2239–41; A2242–44; A2245–47; A2248–50; *see also Starhome GmbH v. AT&T Mobility LLC*, 743 F.3d 849, 856 (Fed. Cir. 2014) (“We have made clear that dictionaries and treatises can often be useful in claim construction, particularly insofar as they help the court ‘to better understand the underlying technology and the way in which one of skill in the art might use the claim terms.’” (quoting *Phillips*, 415 F.3d at 1318); *id.* (“judges are free to rely on dictionaries at any time during the process of construing claims ‘so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.’” (quoting *Phillips*,



415 F.3d at 1322-23). And that is precisely how the language was used in the claims of the ‘243 patent. *See* A94–95, A97–99.

\* \* \*

In sum, the straightforward claim language, the specification’s clarity that “essentially midway” is only a “preferred embodiment,” and the consistent dictionary definitions all counsel in favor of Stryker’s construction of “juxtaposed with.” The district court’s contrary construction should be reversed.

### **III. The court abused its discretion in barring Stryker from asserting infringement under the doctrine of equivalents**

If this Court upholds the “essentially midway” construction, it should nonetheless reverse the district court’s judgment, which unreasonably prevented Stryker from showing infringement under the doctrine of equivalents.<sup>4</sup>

#### **A. The district court erred in allowing Defendants to move for summary judgment after Stryker proposed a final judgment *in Defendants’ favor***

As discussed above, following issuance of the district court’s *Markman* opinion, Stryker sought consent to a global judgment that

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<sup>4</sup> If this Court reverses the district court’s “essentially midway” construction and its attendant judgment, there will be no need for it to also consider the Local Rules issue presented in this section.

would have allowed an immediate and efficient appeal involving all parties and all relevant claim construction issues. When negotiations failed, Stryker moved for entry of final judgment. A6–7. The district court denied Stryker’s motion at Wright and Zimmer’s request and directed all Defendants to move for summary judgment. A7.

The district court should have granted Stryker’s motion for final judgment. It is indisputable that Stryker proposed an efficient means to bring before this Court all parties to this litigation and the two relevant claim constructions. It is also indisputable that there was no just reason to delay this appeal. Respectfully, refusing to enter final judgment and instead allowing Defendants to move for summary judgment—prior to the conduct of discovery—made no sense. In the end, the district court’s grant of summary judgment achieved the exact same result as what Stryker had proposed many months earlier: a final judgment that permitted the appeal of both claim terms. The only differences are that seventeen months elapsed from the date the district court issued its *Markman* opinion, Defendants litigated a motion that will likely be irrelevant after this appeal, the parties incurred unnecessary expenses, and Defendants had more time to exploit Stryker’s in-

vention in the marketplace.<sup>5</sup>

To the extent the district court's decision to allow summary judgment proceedings served any reasonable purpose, it was fundamentally unfair of the court to then bar Stryker from opposing summary judgment on the merits. Stryker had a valid doctrine of equivalents argument that came into being only after the district court's "essentially midway" construction eliminated Stryker's previously-meritorious position that Defendants infringed literally. Depriving Stryker of that equivalency argument because Stryker did not assert a specific doctrine of equivalents theory when it served its initial infringement contentions was an abuse of discretion.

**B. There was no need for doctrine of equivalent contentions before the court's errant claim construction**

"The Local Patent Rules exist to further the goal of full, timely discovery.... Infringement contentions are merely designed to streamline the discovery process." *See Voxpath RS, LLC v. LG Elecs. U.S.A., Inc.*, 2012 WL 5818143, at \*3 (D.N.J. Nov. 14, 2012) (quotations and ci-

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<sup>5</sup> The district court's decision to proceed to summary judgment on the "sleeve" requirement in spite of Stryker's acknowledgement that Wright and Zimmer did not practice that requirement under any infringement theory resulted in an advisory opinion in a circumstance in which there was no longer a live case or controversy.

tations removed). Under the local rules, a patentee is required to state “whether each limitation of each asserted claim is alleged to be literally present or present under the doctrine of equivalents[.]” L. Pat. R. 3.1(e).

At the outset of this case—in May 2012—Stryker timely disclosed its preliminary infringement contentions. *See* A5. At that time, the asserted claims of the ‘243 patent required only that the “securement recess” and the “securement taper” be “juxtaposed” in the shell in a manner that allowed both locking mechanisms to function. There was no “essentially midway” limitation. Thus, Stryker did not include a doctrine of equivalents analysis comparing Defendants’ products to a limitation that did not exist.

Aware that the district court’s eventual claim construction ruling could alter the infringement analysis, Stryker made sure to preserve its right to assert the doctrine of equivalents: “In the event that a claim limitation is deemed to be missing under a literal infringement analysis (e.g., due to claim construction), Stryker reserves the right to demonstrate the presence of a substantial equivalent of such an element and pursue infringement claims under the doctrine of equivalents.” A7.

*Over a year later*, in July 2013, the district court issued its claim construction ruling creating the “essentially midway” requirement. A16. At that moment, Stryker could no longer prove literal infringement because Defendants’ products do not have securement recesses appearing midway along the tapers of their shells. *See* A10. Yet the district court refused to allow Stryker to raise the doctrine of equivalents with respect to this new limitation because Stryker had not applied that specific construction to a doctrine of equivalents analysis in its initial contentions. A13. In other words, the district court barred Stryker from presenting an analysis under the doctrine of equivalents because it did not allege in May 2012 infringement of requirements that did not exist until July 2013.

This was a categorical error. It cannot be that a litigant must anticipate all possible future claim constructions—no matter how off-base—and incorporate those constructions into its initial contentions. In holding otherwise, the district court abused its discretion.

**C. There was no opportunity or reason to amend the contentions after the *Markman* decision**

Nor did Stryker have any opportunity to amend its contentions *after* the district court construed the claims. At that point, all parties and

the court agreed to end discovery regarding infringement of the ‘243 patent. Given the import of the court’s claim constructions, Stryker told the district court that “[t]here should be no further activity with respect to the ‘243 Patent unless the Federal Circuit reverses the claim construction order and remands the case back to this Court for further proceedings.” A1040–41. Defendants agreed that “there is no need at present for further discovery regarding Stryker’s claims of infringement” (A1034), although they sought to continue discovery as to the *validity* of the ‘243 patent. *Id.* Acting through a Magistrate Judge, the district court allowed no further discovery regarding Stryker’s patent—*period*. A1073–74 (scheduling order terminating discovery).

As noted, the purpose of infringement contentions is to “streamline” discovery (*Voxpath*, 2012 WL 5818143, at \*3); and therefore it made no sense to amend contentions to “streamline” discovery that the court had just called off. Rather than take this futile step, Stryker offered final judgments of non-infringement to all of the Defendants so that the claim constructions could be immediately appealed. A6. After Defendants refused that offer and subsequently opposed Stryker’s motion for a final judgment, which would have given them each a full and

immediate victory, the district court called for summary judgment briefing, which had not been previously scheduled—the parties had not even completed fact discovery or engaged in any expert discovery.

Defendants then moved for summary judgment and asked the district court to prohibit Stryker from alleging infringement of the “essentially midway” construction under the doctrine of equivalents because Stryker had not explicitly applied the then-nonexistent requirement to an equivalency analysis in its original infringement contentions. Although noting that “the question has not yet been squarely addressed in this District” (A11), the district court relied on a case from another district and barred all doctrine of equivalents arguments as “a matter of fairness.” A13.<sup>6</sup> This ruling was, however, the opposite of fairness.

In rejecting Stryker’s motion for final judgment and instead calling for summary judgment on an undeveloped record, the district court

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<sup>6</sup> The district court viewed *Rambus Inc. v. Hynix Semiconductor, Inc.*, 2008 WL 5411564, at \*1 (N.D. Cal. Dec. 29, 2008), as addressing “the precise issue presented in the case at bar.” A12. It did not. The primary issue in *Rambus* was the deficiency of an expert’s reports. Here, the district court identified no substantive deficiency in Stryker’s expert declarations. As for the patentee’s infringement contentions, the court in *Rambus* was addressing *final* infringement contentions at a time when trial was set to begin in 21 days.

placed Stryker in an impossible position. It essentially held that it was *too early* for Stryker to appeal the newly-added “essentially midway” construction, and instead put Stryker’s appeal on hold pending summary judgment proceedings. At the same time, it also held that it was *too late* for Stryker to assert infringement of the district court’s new claim limitation under the doctrine of equivalents. This was a lose-lose proposition for Stryker.

On the other hand, Defendants would have faced no prejudice had the district court denied summary judgment as to the “essentially midway” construction. *See Int’l Dev.*, 2011 WL 149859, at \*3 (applying New Jersey local rules and holding that “infringement under the doctrine of equivalents rather than literal infringement” is a “minimal change[ ]” that would take “minimal, if any, effort ... to respond.”). Defendants sought summary judgment before anyone had conducted substantive discovery or submitted a single expert report. Defendants should not have been allowed to force summary judgment proceedings on an undeveloped record and then complain that the record was lacking.

In fact, the summary judgment record included Stryker’s expert’s analysis that was promptly assembled and submitted with the briefing.



By basing its summary judgment opinion on the “essentially midway” construction exclusively on a procedural application of the local rules, the district court avoided entirely the overwhelming evidence that Defendants infringe the new “essentially midway” limitation under the doctrine of equivalents. Stryker had submitted expert declarations written by Dr. Albert Burstein, Ph.D., a distinguished authority in the field of biomechanical engineering and, in particular, the design and function of prosthetic hips. A1238–39 ¶¶ 1–5; A1432–33 ¶¶ 1–5; A1628–29 ¶¶ 1–5. Dr. Burstein separately evaluated Defendants’ products and compared their features to the asserted claims, as construed by the district court. A1241–43 ¶¶ 11–14; A1246–49 ¶¶ 23–30; A1435–39 ¶¶ 11–18; A1442–45 ¶¶ 27–34; A1630–32 ¶¶ 11–14; A1636–39 ¶¶ 23–30. Based upon his review, Dr. Burstein concluded that the location of the groove in each of Defendants’ products is insubstantially different from an “essentially midway” groove because it performs the identical function, in the identical way, for the identical result. A1246–49 ¶¶ 23–30; A1442–45 ¶¶ 27–34; A1636–39 ¶¶ 23–30. Dr. Burstein’s expert opinions were un rebutted as Defendants did not submit any expert reports or declarations.

As explained in *Genentech, Inc. v. Amgen, Inc.*, 289 F.3d 761 (Fed. Cir. 2002), this Court traditionally “defers to the district court when interpreting and enforcing local rules so as not to frustrate local attempts to manage patent cases[.]” *Id.* at 774; *see also, e.g., Nazomi Commc’ns, Inc. v. Microsoft Mobile Oy*, 2014 WL 6678247, at \*4 (Fed. Cir. Nov. 26, 2014); *AntiCancer, Inc. v. Pfizer, Inc.*, 769 F.3d 1323, 1328 (Fed. Cir. 2014). Nevertheless, this Court has warned against overly-restrictive local rules. In *O2 Micro* this Court cautioned that “[i]f a local patent rule required the final identification of infringement and invalidity contentions to occur at the outset of the case, shortly after the pleadings were filed and well before the end of discovery, it might well conflict with the spirit, if not the letter, of the notice pleading and broad discovery regime created by the Federal Rules.” 467 F.3d at 1366.

The district court’s application of the Local Patent Rules to bar Stryker from relying on the doctrine of equivalents here “conflict[s] with the spirit, if not the letter, of the notice pleading and broad discovery regime created by the Federal Rules.” *Id.* It is also the type of “clearly unreasonable, arbitrary, [and] fanciful” application of local rules that this Court has indicated is inappropriate. *See Genentech*, 289 F.3d at

774. As such, the district court's overly-restrictive application of the Local Patent Rules to bar Stryker from asserting infringement under the doctrine of equivalents should be reversed.

### CONCLUSION

For all these reasons, the Court should correct the district court's claim constructions, reverse the final judgments of non-infringement, and remand the cases for proceedings under the correct claim constructions.

Dated: March 3, 2015

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Respectfully submitted,

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# **ADDENDUM**

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**UNITED STATES DISTRICT COURT  
DISTRICT OF NEW JERSEY**

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,

Plaintiffs,

v.

SMITH & NEPHEW, INC.

Defendant.

Civil Action No. 11-6500-SDW

District Judge Susan D. Wigenton

Magistrate Judge Steven C. Mannion

x

~~Proposed~~ **FINAL JUDGMENT**

The Court, having entered summary judgment that claims 20, 27, 41, and 53 of U.S. Patent No. 6,475,243 ("the '243 Patent") are not infringed (*see* Op., Nov. 24, 2014 (Case No. 11-6498 Dkt.244) and Order (Case No. 11-6498 Dkt.245)) in favor of Defendant Smith & Nephew, Inc. ("S&N") and against Plaintiffs Howmedica Osteonics Corp. and Stryker Ireland Ltd. (collectively "Stryker"), hereby enters FINAL JUDGMENT of noninfringement in favor of S&N on all of Stryker's asserted claims of infringement of the '243 Patent and S&N's counterclaim of noninfringement of the '243 Patent.

It is further ORDERED, ADJUDGED, and DECREED that any remaining claims or counterclaims of the parties are hereby dismissed without prejudice.

This is a final and appealable judgment as to all substantive issues underlying the FINAL JUDGMENT of noninfringement, including the Court's claim constructions (*see Markman* Op., July 9, 2013 (Case No. 11-6498 Dkt.144) and Order (Case No. 11-6498 Dkt.145)) and this Court's Opinion (Case No. 11-6498 Dkt.244) and Order (Case No. 11-6498 Dkt.245) granting S&N's motion for summary judgment.

S&N reserves its right to seek an award of attorney fees pursuant to 35 U.S.C. § 285 and United States District Court for the District of New Jersey Local Civil Rule 54.2 within 30 days of the entry of this Final Judgment.

**SO ORDERED:**

Dated: December 17, 2014  
Newark, New Jersey

  
Susan D. Wigenton  
United States District Judge

**UNITED STATES DISTRICT COURT  
DISTRICT OF NEW JERSEY**

HOWMEDICA OSTEONICS CORP. and	:	
STRYKER IRELAND LTD.,	:	
	:	Civil Action No. 11-6499-SDW
Plaintiffs,	:	
v.	:	District Judge Susan D. Wigenton
	:	Magistrate Judge Steven C. Mannion
WRIGHT MEDICAL TECHNOLOGY, INC.	:	
	:	
Defendant.	x	

~~11-6499-SDW~~ **FINAL JUDGMENT**

The Court, having entered summary judgment that claims 20, 27, 41, and 53 of U.S. Patent No. 6,475,243 ("the '243 Patent") are not infringed (*see* Op., Nov. 24, 2014 (Case No. 11-6498 Dkt.244) and Order (Case No. 11-6498 Dkt.245)) in favor of Defendant Wright Medical Technology, Inc. ("Wright") and against Plaintiffs Howmedica Osteonics Corp. and Stryker Ireland Ltd. (collectively "Stryker"), hereby enters FINAL JUDGMENT of noninfringement in favor of Wright on all of Stryker's asserted claims of infringement of the '243 Patent and Wright's counterclaim of noninfringement of the '243 Patent.

It is further ORDERED, ADJUDGED, and DECREED that any remaining claims or counterclaims of the parties are hereby dismissed without prejudice.

This is a final and appealable judgment as to all substantive issues underlying the FINAL JUDGMENT of noninfringement, including the Court's claim constructions (*see Markman* Op., July 9, 2013 (Case No. 11-6498 Dkt.144) and Order (Case No. 11-6498 Dkt.145)) and this Court's Opinion (Case No. 11-6498 Dkt.244) and Order (Case No. 11-6498 Dkt.245) granting Wright's motion for summary judgment.

Wright reserves its right to seek an award of attorney fees pursuant to 35 U.S.C. § 285 and United States District Court for the District of New Jersey Local Civil Rule 54.2 within 30 days of the entry of this Final Judgment.

**SO ORDERED:**

Dated: December 17, 2014  
Newark, New Jersey

  
Susan D. Wigenton  
United States District Judge

**UNITED STATES DISTRICT COURT  
DISTRICT OF NEW JERSEY**

HOWMEDICA OSTEONICS CORP. and	:	
STRYKER IRELAND LTD.,	:	
	:	Civil Action No. 11-6511-SDW
Plaintiffs,	:	
v.	:	District Judge Susan D. Wigenton
	:	Magistrate Judge Steven C. Mannion
ZIMMER, INC.	:	
	:	<b><u>CASE CLOSED</u></b>
Defendant.	x	

**FINAL JUDGMENT**

The Court, having entered summary judgment that claims 20, 27, 41, and 53 of U.S. Patent No. 6,475,243 ("the 243 Patent") are not infringed (*see* Op., Nov. 24, 2014 (Case No. 11-6498 Dkt.244) and Order (Case No. 11-6498 Dkt.245 in)) in favor of Defendant Zimmer, Inc. ("Zimmer") and against Plaintiffs Howmedica Osteonics Corp. and Stryker Ireland Ltd. (collectively "Stryker"), hereby enters FINAL JUDGMENT of noninfringement in favor of Zimmer on all of Stryker's asserted claims of infringement of the '243 Patent and Zimmer's counterclaim of noninfringement of the '243 Patent.

It is further ORDERED, ADJUDGED, and DECREED that any remaining claims or counterclaims of the parties are hereby dismissed without prejudice.

This is a final and appealable judgment as to all substantive issues underlying the FINAL JUDGMENT of noninfringement, including the Court's claim constructions (*see Markman* Op., July 9, 2013 (Case No. 11-6498 Dkt.144) and Order (Case No. 11-6498 Dkt.145)) and this Court's Opinion (Case No. 11-6498 Dkt.244) and Order (Case No. 11-6498 Dkt.245) granting Zimmer's motion for summary judgment.

Zimmer reserves its right to seek an award of attorney fees pursuant to 35 U.S.C. § 285 and United States District Court for the District of New Jersey Local Civil Rule 54.2 within 30 days of the entry of this Final Judgment.

**SO ORDERED:**

Dated: December 17, 2014  
Newark, New Jersey

  
Susan D. Wigenton  
United States District Judge





## I. BACKGROUND<sup>1</sup>

Stryker commenced this patent infringement litigation on November 4, 2011, alleging that Defendants' products infringed U.S. Patent No. 6,475,243 ("the '243 Patent"), which describes certain of Stryker's acetabular cup technologies with respect to implants used in hip replacement surgeries. (Dkt. No. 1, Complaint, at ¶¶ 1-2).<sup>2</sup> Stryker alleges both direct and indirect infringement against each defendant under 35 U.S.C. § 271. (*Id.* at ¶¶ 13-22). On May 17, 2012, Stryker served on each defendant their disclosure of asserted claims and infringement contentions ("Infringement Contentions"), asserting infringement of a substantial number of claims in the '243 Patent. (*See, e.g.*, Dkt. No. 223-4 at 2-3). In order to resolve these motions, however, the parties agree that only four claims contained in the '243 Patent are relevant here: Claims 20, 27, 41, and 53 (the "Relevant Claims").

More specifically, the genesis of these motions lies in this Court's July 9, 2013 Markman Opinion, in which two sets of language contained in the Relevant Claims were construed: (1) the language relating to the securement tapers; and (2) the language relating to the location of the recess taper. The Court construed the language relating to the securement tapers to mean "requires that the internal taper of the shell mates with the external taper of a metallic securing member (*i.e.* sleeve) secured to and separate from the bearing member." (Dkt. No. 144, Markman Op., at 31).

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<sup>1</sup> The Court will only discuss facts that it deems relevant to the resolution of these motions. The Court has taken these facts from the pleadings, the parties' statements of undisputed material fact pursuant to L. Civ. R. 56.1, and any exhibits filed in connection with these motions. Unless the Court notes otherwise, these facts are considered undisputed.

<sup>2</sup> Plaintiffs initially filed four separate complaints—one for each original defendant—on November 4, 2011. (*See* Civil Action Nos. 11-6498, 11-6499, 11-6500, & 11-6511). On May 8, 2013, this Court entered an order consolidating all of those cases under Civil Action No. 11-6498. Because the complaints are identical in all respects with the exception of the name and description of the defendant, the Court will simply refer to the Complaint located on the consolidated docket. In addition, all other docket references made herein are to Civil Action No. 11-6498.

In other words, this Court found that the language imposed a “sleeve” requirement. With respect to the language relating to the location of the recess taper, this Court provided the following construction: “the recess is essentially midway along the taper such that the effectiveness of each is not compromised.” (Id. at 24) (emphasis added).

As a result of the Court’s Markman Opinion—and in order to facilitate an appeal of that decision—Stryker offered a stipulated final judgment of noninfringement to both Wright and Zimmer on the basis of the “sleeve” construction on September 3, 2013. (Dkt. No. 234-1, Pls.’ Resp. to Wright’s Statement of Undisputed Material Facts, at ¶ 6; Dkt. No. 236-1, Pls.’ Resp. to Zimmer’s Statement of Undisputed Material Facts, at ¶ 6). Stryker did not, however, offer final judgment to Wright and Zimmer on the basis of the “essentially midway” construction. (See Dkt. No. 234-1 at ¶¶ 21-24; Dkt. No. 236-1 at ¶¶ 26-29). Rather, that offer was only made to S&N. (Dkt. No. 234-1 at ¶ 23). Following a September 27, 2013 meet-and-confer at which the parties discussed the proposed final judgment, Stryker moved for final judgment without the consent of Defendants on October 15, 2013. (Id.; Dkt. No. 161-1, Pls.’ Br. in Supp. of Mot. for Entry of Final J., at 1). Stryker’s motion mirrored its September 3 proposal to Defendants: Stryker proposed a final judgment of noninfringement on the basis of the “sleeve” construction to Wright and Zimmer and a final judgment of noninfringement on the basis of the “essentially midway” construction to S&N. (Dkt. No. 161-1 at 2-5). In its moving brief, Stryker conceded that it could not prove infringement by Wright and Zimmer under the Court’s “sleeve” construction. (Id. at 4). In addition, Stryker stated that it was “no longer contend[ing]” that S&N infringed the ’243 Patent under the Court’s “essentially midway” construction. (Id.).

Wright and Zimmer vigorously opposed Stryker’s motion, arguing that the proposed judgment was too narrow in scope and that it should also cover the “essentially midway”

construction. (See Dkt. No. 180, Wright and Zimmer’s Opp’n Br., at 14-22). S&N, on the other hand, did not oppose the motion. In response to Wright’s and Zimmer’s opposition, Stryker stated that it had strong infringement arguments against Wright and Zimmer with respect to the “essentially midway” construction under the doctrine of equivalents (the “DOE”). (Dkt. No. 186, Pls.’ Reply Br., at 4-5). As such, Stryker argued that judgment on that ground would be inappropriate as to those defendants. (*Id.* at 4). On May 15, 2014, this Court entered an order denying Stryker’s motion as moot and directing the parties to file their motions for summary judgment. (Dkt. No. 215, Order Den. Mot. for Entry of J.). Defendants then timely filed the instant motions for summary judgment on June 6, 2014. (Dkt. No. 220, S&N’s Mot. for Summ. J.; Dkt. No. 224, Wright’s Mot. for Summ. J.; Dkt. No. 225, Zimmer’s Mot. for Summ. J.).

The crux of the motions now before the Court boils down to whether Stryker has properly raised its DOE theory of infringement with respect to the “essentially midway” construction. To understand why, a bit of backtracking is required. In its May 17, 2012 Infringement Contentions, Stryker included the following statement regarding the DOE:

To the extent that any of the limitations of the asserted claims are not deemed to be literally infringed . . . Stryker contends that they are infringed under the doctrine of equivalents. In the event that a claim limitation is deemed to be missing under a literal infringement analysis (*e.g.*, due to claim construction), Stryker reserves the right to demonstrate the presence of a substantial equivalent of such an element and pursue infringement claims under the doctrine of equivalents.

(Dkt. No. 223-4 at 3-4). This general reservation of rights is the only reference that Stryker makes to the DOE in its Infringement Contentions—Stryker does not specifically assert the doctrine anywhere in its claim chart. (See generally *id.*, Ex. A, at 1-24). In addition, Stryker has never moved to amend its Infringement Contentions to include any DOE theory with respect to any claims in the ’243 Patent. In their moving papers, Defendants argue that Stryker’s failure to

disclose the particulars of its DOE theory in its Infringement Contentions precludes Stryker from asserting the theory with respect to the “essentially midway” construction. In response, Stryker argues that the above reservation of rights in its Infringement Contentions was a sufficient assertion of the DOE under Local Patent Rule 3.1 and, even if it were not, the special circumstances that arose in this case following the Court’s Markman Opinion relieved Stryker of any obligation to amend its Infringement Contentions. For the reasons that follow, Stryker’s failure to specifically delineate its DOE infringement theory either in its original Infringement Contentions or via amended contentions precludes Stryker from asserting that theory for the first time in opposition to Defendants’ motions for summary judgment. Accordingly, the Defendants’ Motions for Summary Judgment are **GRANTED**.

## **II. DISCUSSION**

### **A. The Summary Judgment Standard**

Under Rule 56(a) of the Federal Rules of Civil Procedure, summary judgment is appropriate when “the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). The party asserting the absence or presence of genuinely disputed material fact must support that assertion either with the materials in the record or by demonstrating “that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact.” Fed. R. Civ. P. 56(c). A dispute is genuine if “the evidence is such that a reasonable jury could return a verdict for the non-moving party.” Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). Stated differently, the inquiry on a motion for summary judgment is limited solely to whether there exists a genuine dispute between the parties “that properly can be resolved only by a finder of fact because [it] may reasonably be resolved in favor of either

party.” Id. at 250. Thus, in cases in which “the record taken as a whole could not lead a rational trier of fact to find for the non-moving party,” summary judgment is appropriate. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587 (1986).

On a motion for summary judgment, therefore, the movant must first demonstrate that no genuine dispute of material fact exists; upon such a showing, the burden then shifts to the non-movant to demonstrate the existence of a genuine dispute such that a trial is required. Celotex Corp. v. Catrett, 477 U.S. 317, 323-24 (1986). In making that demonstration, the non-movant “must do more than simply show that there is some metaphysical doubt as to the material facts”—rather, the non-movant must come forward with specific facts that create a genuine dispute for trial. Matsushita, 475 U.S. at 586-87. It thus follows that the non-movant cannot defeat summary judgment solely by way of unsupported factual allegations or speculation. Ridgewood Bd. of Educ. v. N.E. ex rel. M.E., 172 F.3d 238 252 (3d Cir. 1999). It must be noted, however, that the facts and the reasonable inferences derived therefrom must be viewed in the light most favorable to the non-movant. See Pa. Coal Ass’n v. Babbitt, 63 F.3d 231, 236 (3d Cir. 1995).

Specifically in the context of a motion for summary judgment of non-infringement, the issue of whether a product infringes—either literally or under the doctrine of equivalents—is treated as a question of fact. Cook Biotech Inc. v. Acell, Inc., 460 F.3d 1365, 1373 (Fed. Cir. 2006). Thus, summary judgment on the issue of literal infringement is appropriate “when no reasonable jury could find that every limitation recited in the properly construed claim either is or is not in the accused device.” Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998). Similarly, summary judgment of non-infringement under the DOE is appropriate “where the evidence is such that no reasonable jury could determine two elements to be equivalent.” Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17, 39 n.8 (1997).

## B. Analysis

### 1. The “Sleeve” Construction

With respect to Zimmer and Wright, Stryker admits that it cannot prove infringement of the ’243 Patent against either defendant in light of this Court’s “sleeve” construction. (Dkt. No. 234, Pl.’s Opp’n Br., at 1; Dkt. No. 236, Pl.’s Opp’n Br., at 1). Therefore, Zimmer’s and Wright’s motions for summary judgment of non-infringement on that basis are **GRANTED**.<sup>3</sup>

### 2. The “Essentially Midway” Construction

In opposition to Defendants’ motions, Stryker does not argue that Defendants’ products literally infringe under the Court’s “essentially midway” construction; instead, Stryker argues only that summary judgment of non-infringement should be denied based solely upon its DOE theory of infringement. Moreover, in its reply brief in support of its prior motion for final judgment pursuant to Rule 54(b), Stryker claimed literal infringement only against the now-dismissed Depuy defendants. (See Dkt. No. 186 at 4-5). Thus, Stryker’s only potential argument for infringement lies in the doctrine of equivalents.

Infringement under the doctrine of equivalents exists “if there is equivalence between those elements of the accused product and the claimed limitations of the patented invention that are not literally infringed.” Zelinski v. Brunswick Corp., 185 F.3d 1311, 1316 (Fed. Cir. 1999). In this context, “equivalence” means that “the differences between the element and the claim limitation are ‘insubstantial.’” Id. Insubstantiality, in turn, is found where the allegedly infringing product and the patented product (1) perform substantially the same function, (2) in substantially the same

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<sup>3</sup> As to S&N, Stryker notes that S&N is neither asking for nor entitled to summary judgment of non-infringement under the “sleeve” construction, and S&N does not contest that assertion. Accordingly, this Court finds that S&N is moving for summary judgment solely on the basis of the “essentially midway” construction. No opinion is expressed herein as to whether S&N would be entitled to summary judgment on the basis of the “sleeve” construction.

way, (3) in order to achieve the same result. Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608 (1950) (internal quotations and citations omitted).

Stryker argues that its reservation of rights as to the DOE in its Infringement Contentions is sufficient to enable it to now assert the doctrine specifically as to the “essentially midway” claim limitation to defeat Defendants’ motions for summary judgment. This Court disagrees.

This District’s Local Patent Rules “exist to further the goal of full, timely discovery and provide all parties with adequate notice and information with which to litigate their cases.” TFH Publ’ns v. Daskocil Mfg. Co., 705 F. Supp. 2d 361, 366 (D.N.J. 2010). Put differently, the Local Patent Rules force the adversaries to disclose, solidify, and adhere to their legal theories of infringement and invalidity in the early stages of the litigation. Nautilus Neurosciences, Inc. v. Wockhardt USA LLC, No. 11-1997, 2013 WL 7901901, at \*2 (D.N.J. Jan. 23, 2013). To that end, the Local Patent Rules require a patentee to include with its infringement contentions a chart that specifically identifies “where each limitation of each asserted claims is found within each Accused Instrumentality.” L. Pat. R. 3.1(c). Furthermore, the patentee’s infringement contentions must assert “whether each limitation of each asserted claim is alleged to be literally present or present under the doctrine of equivalents in the Accused Instrumentality.” L. Pat. R. 3.1(e) (emphasis added). The Local Patent Rules thus demand of the patentee precision and specificity in identifying its theories of infringement, including the DOE. See Voxpath RS, LLC v. LG Elecs. U.S.A., Inc., No. 12-952, 2012 WL 5818143, at \*5 (D.N.J. Nov. 14, 2012).

In light of the above, it would seem self-evident that a mere reservation of the right to assert the doctrine of equivalents is insufficient to satisfy the exacting requirements of L. Pat. R. 3.1, but the question has not yet been squarely addressed in this District. This Court is not, however,



entirely without guidance.<sup>4</sup> Indeed, the Northern District of California has encountered the precise issue presented in the case at bar. In Rambus Inc v. Hynix Semiconductor Inc., the defendants moved for summary judgment of non-infringement under the doctrine of equivalents. Nos. 05-334, 05-2298, 06-244, 2008 WL 5411564, at \*1 (N.D. Cal. Dec. 29, 2008). The patentee's final infringement contentions contained only the following reference to the doctrine of equivalents: "To the extent that any limitation is found to be not literally present, Rambus asserts that such limitation is present under the doctrine of equivalents." Id. at \*3. Applying Northern District of California's Patent Local Rule 3-1(d)—whose language is identical to this District's L. Pat. R. 3.1(e)—the court held that the patentee's general assertion of the DOE fell woefully short of the Rule 3-1(d)'s requirement. Id. Accordingly, the Court held that the patentee's failure to satisfy the local rules provided a sufficient basis to grant the defendants' motion for summary judgment. Id.<sup>5</sup>

This Court agrees with the Rambus Court and applies its reasoning to the case at bar. Here, Stryker's reservation of rights as to the DOE in its Infringement Contentions fails to satisfy the requirements of L. Pat. R. 3.1(e). Indeed, the first sentence in Stryker's boilerplate reservation is

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<sup>4</sup> In patent cases involving issues of first impression with respect to the Local Patent Rules, it is well-settled that courts in this District may rely upon the decisions of other districts with similar patent rules—such as the Northern District of California—for guidance. See Voxpath, 2012 WL 5818143, at \*3 n.3. See also TFH Publ'ns, Inc. v. Doskocil Mfg. Co., 705 F. Supp. 2d 361, 365 n.3 (D.N.J. 2010) ("The Court notes that both the District of New Jersey and the Eastern District of Texas have adopted verbatim their Local Patent Rules from the Northern District of California. The Court recognizes that the issues raised in the instant Motion have not been analyzed in this district and, therefore, finds it appropriate to look to cases from those districts for guidance.").

<sup>5</sup> See also OptimumPath, LLC v. Belkin Int'l, Inc., No 09-1398, 2011 WL 1399257, at \*8 (N.D. Cal. Apr. 12, 2011) (barring reliance on the DOE at claim construction stage for failure to comply with the Patent Local Rule); Electronic Materials v. Mitsubishi Materials Silicon Corp., No. 01-4925, 2004 WL 5363616, at \*4-6 (N.D. Cal. Mar. 2, 2004) (same, in the context of defendants' motion to exclude expert testimony and preclude infringement claims under the DOE).

essentially a carbon copy of the boilerplate reservation made by the patentee in Rambus that failed to satisfy the Northern District of California's Patent Local Rule 3-1(d). Thus, there is no discernible basis on which to distinguish that case from the case at bar.

The issue presented here is simply a matter of fairness. Given that this District's Local Patent Rules unambiguously require litigants to disclose the specifics of their legal theories in the early stages of the litigation, it would be unfair to allow a party to assert an infringement theory at the summary judgment stage that had never been asserted with any specificity at any prior point in the litigation. A patentee cannot be permitted to assert a general DOE theory of infringement and then proffer a more specific DOE theory whenever it becomes convenient for it to do so. To allow such a practice would be to place the adversary in the position of having to constantly guess at the contours of the patentee's infringement theories. Thus, a general reservation of the right to assert the DOE fails to satisfy the Local Patent Rules' chief aim, which is to "provide all parties with adequate notice and information with which to litigate their cases." TFH Publ'ns, 705 F. Supp. 2d at 366. Accordingly, this Court will exercise its discretion to enforce the Local Patent Rules, see Genentech, Inc. v. Amgen, Inc., 289 F.3d 761, 773-74 (Fed. Cir. 2002), and preclude Stryker from asserting its DOE theory of infringement with respect to the "essentially midway" construction.

Because Stryker does not argue literal infringement and cannot argue infringement under the DOE due to its failure to comply with the Local Patent Rules, Defendants' Motions for Summary Judgment of noninfringement on the basis of the "essentially midway" construction are hereby **GRANTED**.

### III. CONCLUSION

In light of the foregoing, Defendants' Motions for Summary Judgment of Noninfringement are **GRANTED**. An appropriate order will follow.

s/ Susan D. Wigenton  
**SUSAN D. WIGENTON**  
**UNITED STATES DISTRICT JUDGE**

Orig: Clerk  
cc: Parties  
Judge Arleo

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

HOWMEDICA OSTEONICS CORP.  
and STRYKER IRELAND LTD.,

Plaintiffs,

V.

DEPUY ORTHOPAEDICS, INC.,  
WRIGHT MEDICAL  
TECHNOLOGY, INC.,  
SMITH & NEPHEW, INC., and  
ZIMMER, INC.,

Defendants.

Civil Action No. 11-6498 (SDW)

## ORDER

November 24, 2014

**WIGENTON**, District Judge.

This matter having come before this Court on the motions of Defendants Smith & Nephew, Inc., Wright Medical Technology, Inc., and Zimmer, Inc. for Summary Judgment of Noninfringement, (Dkt. Nos. 220, 224, 225), and this Court, having carefully reviewed the submissions of the parties, for the reasons stated in this Court's Opinion dated November 24, 2014,

**IT IS** on this 24th day of November, 2014,

**ORDERED** that each Defendant's Motion for Summary Judgment of Noninfringement is **GRANTED**.

s/ Susan D. Wigenton

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**SUSAN D. WIGENTON**

**UNITED STATES DISTRICT JUDGE**

Orig: Clerk  
cc: Parties  
Judge Arleo

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,

Plaintiffs,

v.

DEPUY ORTHOPAEDICS, INC.,  
Defendants.

Civil Action No. 11-CV-6498  
11-CV-6499  
11-CV-6500  
11-CV-6511

(SDW) (MCA)

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,

Plaintiffs,

v.

WRIGHT MEDICAL TECHNOLOGY,  
INC.,  
Defendant.

**OPINION (Markman Hearing)**

July 9, 2013

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,

Plaintiffs,

v.

SMITH & NEPHEW, INC.,  
Defendant.

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,

Plaintiffs,

v.

ZIMMER, INC.,  
Defendant.

**WIGENTON**, District Judge.

Before the Court are the briefs and supporting materials of Plaintiffs Howmedica Osteonics Corporation (“Howmedica”) and Stryker Ireland Limited (“Stryker”) (collectively “Plaintiffs”) and Defendants DePuy Orthopaedics, Incorporated and DePuy Products, Incorporated (“DePuy”); Wright Medical Technology, Incorporated (“Wright”); Smith & Nephew, Incorporated (“S&N”); and Zimmer, Incorporated (“Zimmer”) (collectively “Defendants”) regarding the request for a patent claim construction pursuant to Local Patent Rule 4.5(a).

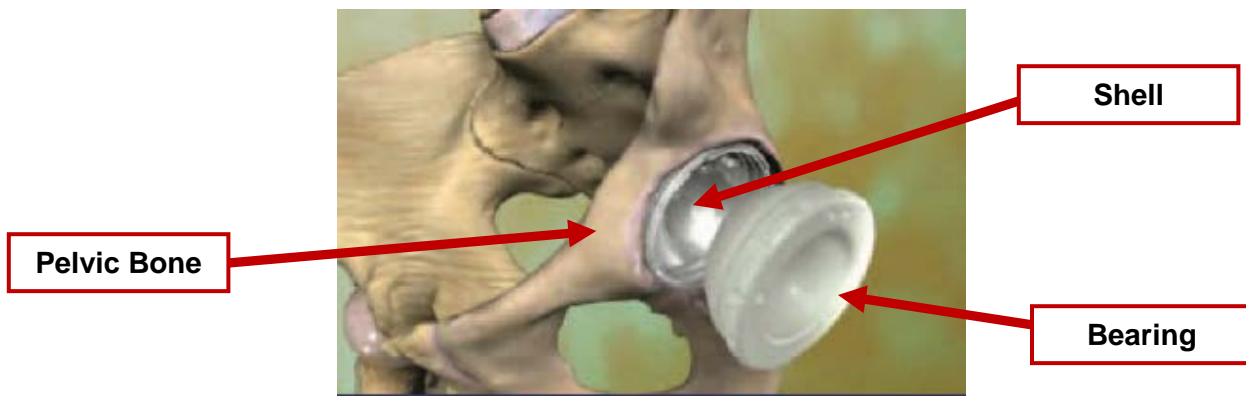
This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a). Venue is proper under 28 U.S.C. §§ 1391(b) and 1400(b). This Court held a Markman hearing on May 2, 2013 and May 9, 2013 regarding patent claims in Plaintiffs’ U.S. Patent No. 6,475,243 (“the ’243 Patent”) and Defendants’ U.S. Patent No. 6,610,097 (“the ’097 Patent”).<sup>1</sup> After carefully considering the parties’ written and oral arguments regarding nine claims in dispute as to the ’243 Patent and fourteen claims in dispute as to the ’097 Patent, this Court has construed several claim terms, as discussed below.

## **FACTUAL AND PROCEDURAL BACKGROUND<sup>2</sup>**

This matter relates to two patents involving surgical implants used in hip replacement procedures—the ’243 and ’097 Patents. In the simplest terms, hip replacement surgery involves removing a diseased hip joint and replacing it with an artificial joint, called a prosthesis. There are two components of a hip prosthesis—the acetabulum (socket) and the femoral head (ball). The acetabular component consists of a shell designed to fit the acetabulum and a bearing (or insert) designed to secure into the shell, as illustrated below.

<sup>1</sup> Four individual cases relating to this matter—11-cv-6498, 11-cv-6499, 11-cv-6500, and 11-cv-6511—were consolidated *sua sponte* under the lead case—11-cv-6498—on May 9, 2013.

<sup>2</sup> Unless otherwise noted, the facts are taken from the parties’ submissions.



The '243 Patent addresses acetabular cup technologies featuring a dual-locking mechanism and the capability to accommodate different types of bearings (*i.e.* a soft polyethylene bearing and a hard ceramic or metal bearing). On May 22, 1998, the original parent application of the '243 Patent was filed. On November 5, 2002, the United States Patent and Trademark Office ("PTO") issued the '243 Patent. On December 7, 2010, the PTO issued an *Ex Parte* Reexamination Certificate confirming the validity of the '243 Patent. Howmedica owns the '243 Patent and Plaintiffs are joint assignees of this patent.

The '097 Patent addresses prosthetic cup assembly which includes components possessing a self-locking taper and associated method. The '097 Patent's parent application was filed on March 15, 2000. On September 25, 2001, the PTO issued a restriction requirement directing DePuy to choose between different sets of claims. DePuy chose to proceed with claims covering two-piece assemblies and not three-piece systems. The amended patent application dated June 24, 2002 reflects DePuy's intent to claim two-piece systems. The '097 Patent was issued in 2003. DePuy is the owner and assignee of the '097 Patent.

On November 4, 2011, Plaintiffs filed a Complaint alleging patent infringement and indirect patent infringement of the '243 Patent. On February 13, 2012, Defendants filed counterclaims seeking declaratory judgment of non-infringement as to the '243 Patent,

declaratory judgment of invalidity as to the '243 Patent, and declaratory judgment of rights as to the '243 Patent. DePuy filed a counterclaim seeking patent infringement of the '097 Patent and indirect infringement of the '097 Patent. On November 19, 2012, the parties filed a Joint Claim Construction and Prehearing Statement for the '243 Patent and the '097 Patent. A Markman hearing was held before this Court on May 5, 2013 and May 9, 2013.

## LEGAL STANDARD

### *Markman Hearing and Claim Construction*

Patent claim construction is a matter of law for the court. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995). During interpretation of a claim, courts should initially look to intrinsic evidence, namely “the patent claims, the specification and the prosecution history if in evidence.” Bristol-Myers Squibb Co. v. Immunex, 86 F. Supp. 2d 447, 448 (D.N.J. 2000). “[I]ntrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.” Vitronics Corp. v. Conceptoronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). “The court should presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms.” Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. A person of ordinary skill in the art “is deemed to read the claim term . . . in the context of the entire patent.” Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005); see Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (“We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”) (citation omitted); see also Markman, 52 F.3d at 979.

If the intrinsic evidence alone will not resolve the ambiguity, the court may rely on extrinsic evidence, which includes expert testimony, treatises, dictionaries and articles. Bristol-



Myers Squibb Co., 86 F. Supp. 2d at 448-49. Extrinsic evidence may not be used to vary or contradict the meaning established by the intrinsic evidence. Phillips, 415 F.3d at 1318-19, 1324. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be . . . the correct construction.” Id. at 1316.

A key aspect of claim construction is to assist the jury in understanding complicated language and concepts. See Encap LLC v. Oldcastle Retail, Inc., No. 11-cv-808, 2012 WL 2339095, at \*9 (E.D. Wis. June 19, 2012) (“Claim construction is not intended to allow for needless substitution of more complicated language for terms easily understood by a lay jury.”); see also C.R. Bard, Inc. v. United States Surgical Corp., 388 F.3d 858, 863 (Fed. Cir. 2004) (“[M]erely rephrasing or paraphrasing the plain language of a claim by substituting synonyms does not represent genuine claim construction.”); AFG Indus., Inc. v. Cardinal IG Co., Inc., 239 F.3d 1239, 1247 (Fed. Cir. 2001) (“It is critical for trial courts to set forth an express construction of the material claim terms in dispute, in part because the claim construction becomes the basis of the jury instructions, should the case go to trial. It is also the necessary foundation of meaningful appellate review.”) (internal citation omitted); High Point SARL v. Sprint Nextel Corp., No. 09-cv-02269, 2011 U.S. Dist. LEXIS 155932, at \*35 (D. Kan. Jan. 24, 2011) (“A court may . . . refuse to construe a commonly understood term if the proposed construction would create ambiguity or confuse the jury.”).

## **DISCUSSION**

The parties dispute the meanings of twenty-three claim terms or phrases with respect to the '243 Patent and the '097 Patent. The disputed terms in the '243 Patent are (1) intraoperatively; (2) system; (3) kit; (4) assembly; (5) selection of the internal bearing member; (6) juxtaposed with/location of the recess relative to the taper; (7) selectable for effective

selective securement; (8) the bearing member; and (9) language relating to securement tapers. The disputed terms in the '097 Patent, in essence, are: (1) between and cavity;<sup>3</sup> (2) configured with and (ii); (3) engage and connection;<sup>4</sup> (4) inner surface; (5) anti-rotation recesses and anti-rotation protrusions;<sup>5</sup> (6) upper bearing rim; and (7) bearing.

### **The '243 Patent**

#### **a. "intraoperatively"**

Plaintiffs and Defendants disagree on the meaning of "intraoperatively" as used in claims 41 and 53 which explain that a bearing can be secured within a shell intraoperatively.<sup>6</sup> For instance, claim 41 recites, in pertinent part, "whereby the first and the second of the internal bearing members each is selectable for effective selective axial securement within the cavity of the shell member to complete the acetabular cup assembly intraoperatively." U.S. Patent No. '243, Re-exam., Cl. 41 (issued Dec. 7, 2010).

Plaintiffs define "intraoperatively" as "during an operation." (Plaintiff's Opening Markman Brief ("Pls. Op. Br.") at 9.) Defendants argue that "intraoperatively" means "in an operating room during surgery." (Defendant's Opening Markman Brief ("Def. Op. Br.") at 10.) Both parties' proposed constructions capture the principle that "intraoperatively" means "during an operation" or "during surgery." The real dispute pertains to whether "intraoperatively" requires that the surgery or operation occur in the operating room. Defendants include the limitation that the surgery occur "in the operating room" while Plaintiffs do not. (Def. Op. Br. 10-11; Pls. Op. Br. 9-10.) In support of their argument, Defendants contend that "during prosecution [Plaintiffs] clearly and repeatedly emphasized that the intraoperative

<sup>3</sup> The disputed language including "between" and "cavity" relate to six different claim terms.

<sup>4</sup> The disputed language including "engage" and "connection" relate to two different claim terms.

<sup>5</sup> The disputed language in connection with "anti-rotation recesses" and "anti-rotation protrusions" relate to two different claim terms.

<sup>6</sup> The parties agree that "intraoperative" and "interoperative" have the same meaning in the '243 Patent. (Markman Hrg. Tr. at 22-23 (May 2, 2013).)

selection and assembly of the acetabular cup occurs ‘in the operating room.’” (Defendants’ Joint Responsive Markman Brief (“Defs. Resp. Br.”) at 9 (citing to Dkt. No. 74, Ex. 2 at STRTRID00006676-78, Ex. 3 at STRTRID00006997-7016, Ex. 4 at STRTRID00007340; Dkt. No. 73 at 11-13).) Defendants further argue that Plaintiffs concede in their opening brief that “an operating room is undoubtedly where most operations occur.” (Defs. Resp. Br. 10 (citing to Dkt. No. 76 at 9).)

During interpretation of a patent claim, courts should initially look to intrinsic evidence. Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. “The court should presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms.” Id. Nothing in the patent or prosecution history indicates that the term “intraoperatively” requires that an operation take place specifically in an operating room. See U.S. Patent No. ’243 (issued Nov. 5, 2002). Defendants point to the language that “valuable time in the operation room is thus saved” in reference to “intraoperatively.” (Defs. Op. Br. 12 (citing STRTRID00007340).) However, the focus of this language is that time is saved because surgeons can choose which bearing member is appropriate during the surgery. (Plaintiffs ’243 Patent Markman Powerpoint Presentation (“Pls. ’243 Markman PP”) at 18; Pls. Op. Br. 10.) This does not serve to modify “intraoperatively” such that it requires that the procedure take place in an operating room. Furthermore, many places can serve as “an operating room” while not technically being an operating room, such as an office.

Based on the intrinsic evidence, in construing “intraoperatively,” this Court finds that it is not necessary to include a locale limitation. A combination of the parties’ proposed constructions is appropriate here. Accordingly, this Court concludes that “intraoperatively” means “during a surgical procedure.”

**b. “system”; “kit”; “assembly”**

The next three terms—system, kit, and assembly—will be discussed consecutively because their definitions are hierarchal in nature and directly affect one another. The parties agree that these terms should have different meanings as both Plaintiffs and Defendants propose different constructions for “system,” “kit” and “assembly.” See Nystrom v. TREX Co., Inc., 424 F.3d 1136, 1143 (Fed. Cir. 2005) (“When different words or phrases are used in separate claims, a difference in meaning is presumed.”). Additionally, both parties acknowledge the following hierarchy: (1) “system” is broader than “kit” or an “assembly”; (2) a “kit” is narrower than “system” but broader than an “assembly”; and (3) an “assembly” is narrower than a “kit” or a “system.” (Defs. Resp. Br. 18; Pls. Op. Br. 11-17; Markman Hrg. Tr. at 36-37 (May 2, 2013).)

***“system”***

Plaintiffs and Defendants disagree on the construction of “system” as used in claim 41. Plaintiffs contend that “system” means “a group of related parts.” (Pls. Op. Br. 13.) Defendants define a “system” as “a set of related component parts.” (Defs. Resp. Br. 18.) On its face, the key difference between the parties’ proposed constructions is that Defendants include the word “component” as part of their definition of “system” whereas Plaintiffs do not. (Id.)

Plaintiffs contend that inclusion of the word “component” in the definition of “system” is potentially confusing because “the required parts of the system can include a plurality of different bearings . . . [b]ut these bearings do not work together and are not components of one another.” (Pls. Op. Br. 14.) Further, Plaintiffs argue that “[t]o the extent ‘component’ is meant to convey that the shell and bearing are indeed parts of the system, such verbiage is redundant and unnecessary.” (Id. at 15.) Defendants, however, acknowledge that they “have not assigned any special or misleading meaning to the word ‘components.’” (Defs. Resp. Br. 17.) Indeed,

Defendants' argument supports Plaintiffs' construction that "[a] 'system' is a group of related parts." (Defs. Op. Br. 19.) Furthermore, Defendants assert that "the primary dispute relates to the differences between 'system,' 'kit,' and 'assembly.'" (Defs. Resp. Br. 17.)

As previously discussed, in interpreting a patent claim, courts should initially look to intrinsic evidence. Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. In this instance, the term "system" appears only in the preamble of the claim. U.S. Patent No. '243, Re-exam., Cl. 41 (issued Dec. 7, 2010). The specification does not provide any insight into the meaning of the term "system."<sup>7</sup> (See Id.) Additionally, the parties appear to agree that "system" should be defined as either a group or set of related parts. Accordingly, this Court finds that "system" is "a set of related parts."

### ***"kit"***

Plaintiffs and Defendants disagree on the construction of "kit of component parts" as it appears in claim 27. Plaintiffs' proposed construction of "kit" is "a set of parts from which a subset can be selected to create an assembly." (Pls. Op. Br. 16.) Defendants' proposed construction of "kit" is "a set of claimed component parts packaged together." (Defs. Op. Br. 16.) The parties do not dispute that "[a] kit includes various parts, such as a shell and bearings made of different materials." (Defs. Resp. Br. 16.) The parties' main dispute is that Defendants define "kit" as parts that are "packaged together" whereas Plaintiffs essentially refer to "kit" as a "subset" of related parts.

As previously discussed, in interpreting a patent claim, courts should initially look to intrinsic evidence. Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. In support of their proposed construction, Plaintiffs point to claim 27's preamble language which teaches that "[t]he

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<sup>7</sup> The term "system" was added during re-examination of the patent and did not originally appear in the '243 Patent. (See U.S. Patent No. '243, Reexam., Cl. 41-48 (issued Dec. 7, 2010); see Defs. Resp. Br. 18. (citing to Dkt. No. 74, Ex. 4 at STRTRID00007318).)

kit . . . includes parts that can be used to assemble a bearing and a shell assembly.” (Pls. Op. Br. 16.) Plaintiffs note that the ’243 Patent specification does not reference the word “packaged” or any analogous language. (See id. at 17.)

Defendants contend that their proposed construction of “kit” aligns with the plain and ordinary meaning of the word along with how it is used throughout the ’243 Patent. (See Defs. Op. Br. 16.) Defendants argue that Plaintiffs’ proposed construction ignores the specification which teaches that “key aspects of a ‘kit’ . . . [include that] the components are ‘made available,’ ‘provided,’ or ‘furnished’ to the user.” (Id. at 17 (citing U.S. Patent No. ’243 at col.5:6-22, col.7:65-8:1, col.9:19-21 (issued Nov. 5, 2002))). Defendants are also concerned about the differentiation between “kit” versus “system” and “assembly” and argue that their proposed construction effectively takes into account the necessary distinctions. (See Defs. Resp. Br. 17.)

Because the intrinsic evidence is ambiguous, it is proper for this Court to consult extrinsic evidence such as dictionary definitions. Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. Plaintiffs provide, for example, one definition of “kit” from Merriam-Webster’s Dictionary as “a set of parts to be assembled or worked up.” (Pls. Op. Br. 17 (citing App. D9).) Plaintiffs note that based on dictionary definitions, the inclusion of “packaging” is not required for a “kit.” (See id.) One of the definitions that Defendants point to is from Webster’s Third New International Dictionary (1993) which defines “kit” as “a collection of equipment and often supplies typically carried in a box or bag.” (Defs. Op. Br. 17 (citing Ex 29).)

Based on the intrinsic evidence, this Court finds that nothing in the patent language or prosecution history requires that the concept of parts being “packaged together” be included in the definition of “kit.” To the contrary, as both parties agree, the specification supports that a “kit” includes parts—such as a shell and various bearings—to create a bearing and shell

assembly. Additionally, the extrinsic evidence also demonstrates that parts need not be “packaged together” in order to establish a “kit.”

Accordingly, based on the intrinsic and extrinsic evidence, this Court finds that a “kit” is “a subset of related parts.” Defining “kit” in this way adequately construes it more narrowly than “system.”<sup>8</sup> Moreover, this construction would assist a lay jury in understanding the difference between a “kit” and a “system.” See Encap LLC, 2012 WL 2339095, at \*9 (“Claim construction is not intended to allow for needless substitution of more complicated language for terms easily understood by a lay jury.”).

***“assembly”***

Plaintiffs and Defendants disagree on the construction of an “assembly” as it appears in claims 20, 27, 41 and 53. (Pls. Op. Br. 11; Defs. Op. Br. 13.) Plaintiffs’ proposed construction of “assembly” is “a collection of parts that can be fitted together as a unit.” Defendants’ proposed construction of “assembly” is “a set of related component parts combined to form a completed structure.” (Defs. Op. Br. 13.) The heart of the parties’ dispute is whether an “assembly” refers to related parts that *can be combined*—as proposed by Plaintiffs—versus a set of related parts that *have already been combined*—as proposed by Defendants. (Id. at 14.)

First, this Court will look to the intrinsic evidence in construing the term “assembly.” See Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. Both parties argue that the intrinsic evidence supports their respective positions. Defendants point out that claim 27 relates to “[a] kit of component parts for assembling an acetabular cup assembly” and recites that “the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly[.]” (See Defs. Op. Br. 14; U.S.

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<sup>8</sup> Specifically, inclusion of the word “subset” in defining a “kit” makes it narrower than a system. For instance, a “system” is “a set of related parts,” while a “kit” is a “*subset* of related parts.”

Patent No. '243, Cl. 27 (issued Nov. 5, 2002) (emphasis added).) Claims 40 and 41 contain similar language.<sup>9</sup> Defendants note that the language of claim 53—a method claim—references the “completion of the acetabular cup assembly.”<sup>10</sup> (Defs. Op. Br. 14; U.S. Patent No. '243, Reexam., Cl. 53 (issued on Dec. 7, 2010).) Based on the claim language, Defendants contend that an “assembly” is the completed structure that results from securing a bearing member within the shell. (See Defs. Op. Br. 15.) Defendants also argue that the patent specification supports its proposed construction. (See *id.*) For instance, Defendants point to figures where the “assembly” is complete.” (See U.S. Patent No. '243, Fig.1 (issued Nov. 5, 2002); *Id.* (citing to U.S. Patent No. '243 at col.3:47-49 (issued Nov. 5, 2002)).) Lastly, Defendants contend that the prosecution history supports that an “assembly” is a completed structure. (See Defs. Op. Br. 15.) The relevant language in the prosecution history is as follows: “the present invention presents an acetabular shell and bearing system in which a surgeon is able to select any one of a plurality of available bearing members for assembly with a shell member and then assemble the selected bearing [member] with the shell member to establish an acetabular cup assembly in the operating room.” (*Id.* (citing Ex. 2 at STRTRID00006676 (emphasis added)))

On the other hand, Plaintiffs argue that claim 20's preamble does not require that a shell and bearing be combined to create an “assembly.”<sup>11</sup> (Pls. Op. Br. 12.) Plaintiffs argue that an assembly exists when a bearing member is available “for selective securement” within a shell, as

<sup>9</sup> U.S. Patent No. '243, Reexam., Cl. 40, 41 (issued Dec. 7, 2010).

<sup>10</sup> Plaintiffs concede that in claim 53, the inventors expressly claimed that an “assembly” refers to an “actual securement of the parts.” (Plaintiffs Responsive Markman Brief (“Pls. Resp. Br.”) at 7.)

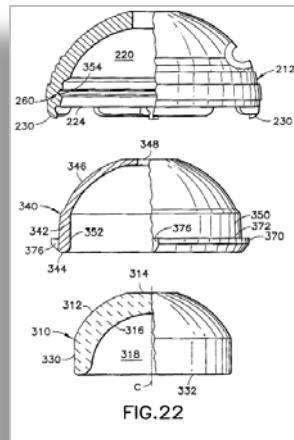
<sup>11</sup> The preamble of claim 20 states:

An assembly having a shell member and an internal bearing member for selective securement within the shell member interoperatively, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the shell member comprising:

U.S. Patent No. '243, Cl. 20 (issued Nov. 5, 2002).



noted in the preamble language of claim 20. (*Id.*) Plaintiffs also contend that the specification supports their proposed construction. (*See id.*) Plaintiffs identify several figures in the specification—including figures 10, 13, 20, and 24—as examples of an “assembly” where the parts are not combined. (*Id.* (citing to U.S. Patent No. '243, Fig. 10, 13, 20, 24. (issued Nov. 5, 2002).) Additionally, Plaintiffs refer to figure 22, as reproduced below:



U.S. Patent No. '243, Fig. 22 (issued Nov. 5, 2002). This figure is “an exploded elevational view, partially sectioned, showing another embodiment including an assembly in which a bearing component is to be assembled with a securing component.” (U.S. Patent No. '243 at col.4:32-35 (issued Nov. 5, 2002); Pls. '243 Markman PP at 38 (emphasis added).) According to Plaintiffs, an “assembly” refers to related parts that are unassembled as well as assembled together. (Pls. Resp. Br. 6.) (noting that “[o]nce the pieces are combined, they *still* are considered ‘an assembly’”) (emphasis in original).

This Court finds that Plaintiffs’ argument that an “assembly” exists whether or not the parts are combined may be misleading or confusing to a jury. Specifically, it blurs the distinction between a “kit” and “assembly” as both terms can potentially include parts that can be fitted together as a unit. Furthermore, Plaintiffs’ contention that the words “for selective

securement” in the claim language modify the term “assembly” such that an “assembly” exists so long as a bearing member is available “*for* selective securement” is misguided. The terms “for selective securement” appear to describe the functionality of the bearing rather than the scope or nature of the assembly. Additionally, as Defendants point out, an “exploded” view—as shown in figure 22 above—is designed to illustrate the component parts of an assembly and how they fit together to form an assembly. (See, e.g., 37 C.F.R. 1.84(h)(1) (explaining that exploded views “show the relationship or order of assembly of various parts”); Defendants’ 243 Patent Markman Powerpoint Presentation (“Defs. ’243 Markman PP”) at 127.) Lastly, Plaintiffs point to instances in the specification describing an acetabular cup “assembly assembled” to argue that the word “assembled” would be superfluous if an assembly consisted of combined parts. This argument is not persuasive. For example, it would not be improper to note that “a chair [that is] assembled” in referencing a complete, assembled chair. Similarly, noting an “assembly [that is] assembled” does not necessitate that an assembly be unsecured and uncombined parts.

Based on the intrinsic evidence, this Court concludes that an “assembly” does require that the shell and bearing be secured together. Because neither party’s construction fully captures the essence of an “assembly,” a combination of the parties’ proposed constructions is appropriate here. This Court finds that an “assembly” is “a collection of related parts that have been combined to form a completed unit.”

**c. selection of the internal bearing member**

Plaintiffs and Defendants disagree on the construction of language relating to the selection of the internal bearing member as it appears in claims 20 and 27.<sup>12</sup> The disputed language is as follows:

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<sup>12</sup> The parties originally disputed the language in claim 53 as well. However, at the Markman hearing, defense counsel indicated that the parties agreed that claim 53 need not be construed. (Markman Hrg. Tr. at 78 (May 2,

- (1) claim 20's description that "the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with the characteristics corresponding to the characteristics of the selected internal bearing member"; and
- (2) claim 27's description that "a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with the characteristics corresponding to the characteristics of a selected one of the internal bearing members."

(Pls. Op. Br. 18; Defs. Op. Br. 20.) Plaintiffs contend that this Court does not need to construe these terms. (Pls. Op. Br. 19.) Defendants propose the following construction with respect to the language relating to selection of a bearing member: "requires a surgeon to select one bearing member from a plurality of bearing members with different securement characteristics." (Defs. Op. Br. 20.) The center of the parties' dispute is whether the disputed language requires the "capability" for selection—as Plaintiffs argue—versus active selection of a particular bearing member—as Defendants argue.

This Court will look to the intrinsic evidence in construing the language relating to selection of the internal bearing member. See Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. In support of their proposed claim construction of the language relating to selection of a bearing member, Defendants rely on intrinsic evidence, namely the claim language. Defendants cite to the language of claim 20 which states that "the internal bearing member being selected from a plurality of bearing members having different characteristics, such that the acetabular cup assembly selectively is provided with the characteristics corresponding to the characteristics of the selected internal bearing member." (Defs. Op. Br. 20-21) (emphasis added). Defendants argue that this requires a surgeon to start with a plurality of different bearings and end up choosing a single bearing to be secured within the shell. (Id. at 21.) Defendants reason that if a

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2013); Defs. '243 Markman PP at 136-37.) Thus, for purposes of this Opinion, briefing and arguments relating to claim 53's language relating to selection of a bearing member will not be addressed.

surgeon only had one bearing available, claim 20 would not be infringed upon because the surgeon is not “selecting” from a plurality of bearing members. (*Id.*) Alternatively, Defendants contend that if a surgeon has a plurality of bearings but does not actually “select” one to be secured within the shell, there would be no infringement of claim 20. (*Id.*) Accordingly, Defendants contend that claim 20 requires active selection of a single bearing from a plurality of bearings. (*Id.*) Similarly, Defendants argue that the language of claim 27—“the acetabular cup assembly selectively is provided with the characteristics corresponding to the characteristics of a selected one of the internal bearing members”—requires active selection of an internal bearing member. (*Id.*)

Plaintiffs argue that no construction is necessary here because the claim language at issue is readily understandable by a person of ordinary skill in the art. (Pls. Op. Br. 19); Finjan, Inc. v. Secure Computing Corp., 626 F.3d 1197, 1207 (Fed. Cir. 2010) (indicating that the Court should give effect to the claim’s clear language and reject the proposed construction which would unjustifiably narrow the claim’s scope). The crux of Plaintiffs’ argument is that the claim language provides that a bearing is capable of being selected, but does not actually need to be selected. (Pls. ’243 Markman PP at 43-44.) In support of this argument, Plaintiffs point to specification language which recites that “any one of which bearing sockets then being capable of securement in place in the shell member interoperatively.” (Pls. ’243 Markman PP at 43 (citing U.S. Patent No. ’234 at col.5:11-21 (issued Nov. 5, 2002)).) Plaintiffs also point to the prosecution history which states, in pertinent part, that “any one of a plurality of bearing members having different characteristics . . . can be selected for interoperative securement within a single shell member.” (Pls. ’243 Markman PP at 44 (citing Feb. 13, 2002 Amendment at STRTRID00007006).) Additionally, Plaintiffs argue that Defendants improperly seek to define

whole paragraphs rather than pointing to particular words or terms requiring construction. (Pls. Op. Br. 19.) Lastly, Plaintiffs argue that Defendants’ proposed construction is overly narrow in requiring a surgeon to select a bearing. (*Id.* at 20.)

In light of the intrinsic evidence, this Court finds that the language relating to the selection of a bearing member does not require construction and should be given its plain and ordinary meaning as Plaintiffs suggest. The words in the claim themselves appropriately and adequately describe what is required for selection of the internal bearing member. Nothing in the claim terms is ambiguous. Nothing in the claim terms requires that this Court read into the disputed language “active selection” of a bearing member. Additionally, Defendants concede that the disputed claim language does not identify an actor (*i.e.* a surgeon) to make the selection of a bearing.<sup>13</sup> (Markman Hrg. Tr. at 78 (May 2, 2013); Defs. Resp. Br. 22.) Accordingly, there is no reason to construe the disputed language to include a surgeon.

**d. “juxtaposed with”/location of the recess relative to the taper**

The parties dispute the claim language relating to the location of the recess relative to the taper, including the words “juxtaposed with.”<sup>14</sup> This language is used in claims 20, 27, 41, and 53 as follows:

1. claim 20: “the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements”;
2. claim 27: “the first and second securing elements being juxtaposed with one another and placed at relative locations such that the effectiveness of each of

<sup>13</sup> This Court notes Defendants’ argument that “the intrinsic record clearly and repeatedly indentifies the surgeon as this actor.” (Defs. Resp. Br. 22.) Nevertheless, the absence of the requirement of a “surgeon” in the plain claim terms indicates that no such restriction should be included in this Court’s construction of the disputed claim language.

<sup>14</sup> The parties do not fully agree as to which language is in dispute. Plaintiffs contend that the terms “juxtaposed with” and “effectiveness” require claim construction while Defendants point to several phrases including “juxtaposed with one another,” “placed at relative locations,” “such that the effectiveness of each,” and “is maintained while in the presence of the other.” (Pls. Op. Br. 22; Defs. Op. Br. 24.)

- the first and second securing elements is maintained while in the presence of the other of the first and second securing elements”;
3. claim 41: “the securement recess and the internal securement taper being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other of the securement recess and the internal securement taper”; and
  4. claim 53: “the securement recess and the internal securement taper are in juxtaposition with one another and placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other of the securement recess and the internal securement taper.”

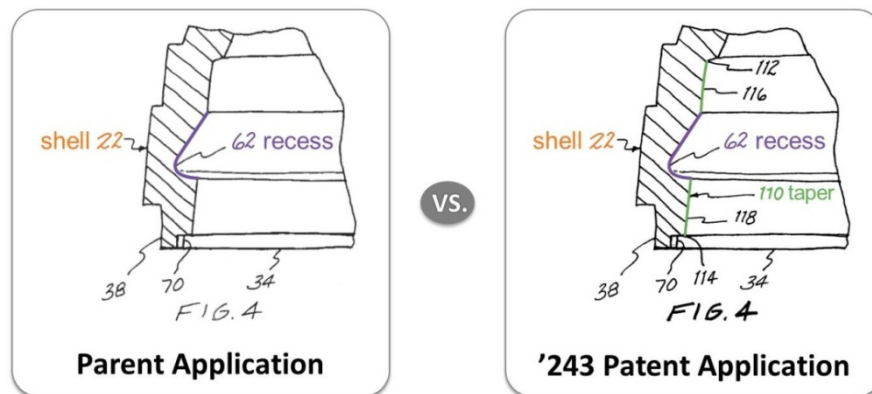
(U.S. Patent No. '243, Cl. 20, 27 (issued Nov. 5, 2002); U.S. Patent No. '243, Reexam., Cl. 41, 53 (issued Dec. 7, 2010).) Plaintiffs argue that the disputed language should be construed as “the first and second securing structures being positioned nearby one another and placed at relative locations such that the ability of each of the first and second securing elements to secure a bearing in the shell is maintained while in the presence of the other of the first and second securing elements.” (Pls. Op. Br. 21.) Defendants contend that the disputed language should be construed as “the recess is essentially midway along the taper such that the effectiveness of each is not compromised.” (Defs. Op. Br. 23.)

This Court will first look to the intrinsic evidence in construing the disputed claim language. See Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. Defendants point to all of the figures in the '243 Patent and argue that each figure displays the recess within and essentially midway along the taper. (Defs. Op. Br. 25.) Additionally, Defendants note that the patent specification includes the following language regarding the relationship of the two locking mechanisms (the taper and the recess):

Seating surface 110 includes an upper end 112 and a lower end 114 and is divided by the recess 62 into an upper segment 116 and a lower segment 118 (see FIG. 4). By placing the recess 62 essentially midway between the upper end 112 and the lower end 114, engagement of the seating surfaces 106 and 110 . . . is facilitated by virtue of the locking being accomplished along segments 116 and 118 having

generally the same, and therefore maximized, axial length. In this manner, the effectiveness of the seating surface 110 in assuring appropriate alignment between the sleeve 100 and the shell member 22 as the sleeve 100 is inserted into the shell member 22 and in subsequently attaining the desired locking engagement with seating surface 106 is not compromised by the presence of the recess 62.

(Defs. Op. Br. 26 (citing Ex. 3 at STRTRID00007171 (lines 12-25) (emphases added); Ex. 1 at 7:8-23).) Defendants note that this language relating specifically to the relationship between the claimed securing recess and taper was not included in the parent application. (*Id.* at 25 (citing Ex. 2 at STRTRID00006607-33).) Defendants also focus on Figure 4 of the '243 Patent—as depicted below—which was amended to demonstrate the similar length of the upper and lower segments of the taper. (*Id.* at 26 (comparing Ex. 2 at STRTRID00007146 with Ex. 2 at STRTRID00006636).)



According to Defendants, “[t]he importance of this disclosure regarding how the locations of the taper and the recess ensure the effectiveness of alignment and locking is underscored by [Plaintiffs] including the disputed language in the asserted independent claims of the '243 Patent at the same time these changes were made to the specification.” (Defs. Op. Br. 26-27 (citing Ex. 3 at STRTRID00007192 (Claim 20), STRTRID00007195 (Claim 27)).)

To the contrary, Plaintiffs argue that a person of ordinary skill in the art would interpret the disputed terms “juxtaposed with” or “in juxtaposition with” to mean that the first and second

securing elements are “positioned nearby” each other in the shell cavity. (Pls. Op. Br. 22.) Plaintiffs contend that the terms “placed at relative locations” supports the proposed construction that the securing elements are near each other and not specifically located midway along the taper. (Id. at 22-23.)

With respect to “effectiveness,” Plaintiffs contend that it should be construed as the “ability” of each of the securing mechanisms to perform their intended function of “securing the bearing in the shell.” (Pls. Op. Br. 23.) Other than referencing a dictionary definition, Plaintiffs do not further provide any explanation as to this aspect of their proposed construction.

In delving deeper into the parties’ proposed constructions, it is helpful to consider the several substantive arguments that the parties raise with respect to their adversaries’ constructions. Defendants argue that Plaintiffs’ proposed construction improperly focuses only on construing “juxtaposition” through use of dictionary definitions. (Defs. Op. Br. 29.) Furthermore, Defendants argue that Plaintiffs fail to provide clarification or boundaries of the claims. (Id.)

Plaintiffs argue that Defendants’ proposed construction renders several words in dispute meaningless. (Pls. Op. Br. 23.) Additionally, Plaintiffs rely on Phillips to argue that Defendants commit the “cardinal sin” of claim construction in attempting to read in a limitation from the preferred embodiment that is articulated in the specification. (Id. (citing Phillips, 415 F.3d at 1320); see, e.g., U.S. Patent No. ’243 at col.7:5-23 (issued Nov. 5, 2002).) Plaintiffs argue that the recess being placed midway along the taper is a preferred embodiment of the ’243 Patent and construing the disputed claim language with this restriction would be improper. (Pls. Op. Br. 24.)

Furthermore, Plaintiffs contend that Defendants’ proposed construction violates the



doctrine of claim differentiation. (Pls. Op. Br. 24 (citing AK Steel Corp. v. Sollac & Ugine, 344 F.3d 1234, 1242 (Fed. Cir. 2003)).) Claim differentiation is a rule of construction that “presumes that there is a difference in scope among the claims of a patent.” Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1479-80 (Fed. Cir. 1998). Under this doctrine, narrow claim limitations cannot be read into broader claims to escape infringement. See e.g., Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1054-55 (Fed. Cir. 1988) (citations omitted). Plaintiffs note that dependent claims 25 and 32 rely on independent claims 20 and 27, respectively. (Pls. Op. Br. 24.) According to Plaintiffs, Defendants’ construction improperly construes the dependent claims as having the same scope as the independent claims. (Id.)

As a preliminary matter, this Court finds that it is necessary to construe more than just the terms “juxtaposed with” or “in juxtaposition” in order to clarify the disputed claims for the jury. The disputed language in claims 20, 27, 41, and 53 imposes three requirements regarding the location of the securing elements. First, the first and second securing structures “are in juxtaposition/being juxtaposed” with one another. Second, the securing structures are “placed at relative locations such that the effectiveness of the securing elements is maintained.” Third, they must be “while in the presence of the other” securing elements of the bearing member. A construction of the disputed language should take into account all of these requirements.

Plaintiffs’ proposed construction of “juxtaposed/juxtaposition” as “positioned nearby” is broad and vague. Likewise, Plaintiffs’ proposed construction does not serve to clarify the disputed language. Instead, it provides a synonym to “juxtaposed/juxtaposition,” which is not helpful for purposes of claim construction. See C.R. Bard, 388 F.3d at 863. Importantly, Plaintiffs’ proposed construction does not address all of the components requiring construction in the disputed language. See Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006)

(noting that “claims are interpreted with an eye toward giving effect to all terms in the claim”). For instance, the jury should be equipped with a solid understanding of the positional relationship between the securing elements—the recess and the taper—through a construction of the disputed language.

Moreover, contrary to Plaintiffs’ arguments, it is not improper for this Court to construe “chunks of claims” for the purposes of claim construction. A court’s construction does not effectively “swap out” the disputed words in a claim. Rather, the purpose of claim construction is to provide the jury “with instructions adequate to ensure that the jury fully understands the court’s claim construction rulings and what the patentee covered by the claims.” Sulzer Textil A.G. v. Picanol N.V., 358 F.3d 1356, 1366 (Fed. Cir. 2004). Moreover, there is no precedent indicating that construction of terms of art within claims has to fit neatly within respective claims. Indeed, as long as construction of claim terms is consistent with use of the words by the inventor, such construction is proper. See Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002).

With respect to Plaintiffs’ “preferred embodiment” argument, Plaintiffs’ reliance on Phillips is misplaced. In Phillips, the Federal Circuit rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. Phillips, 415 F.3d at 1323. In the instant matter, the only embodiment discussed in the context of the ’243 Patent is where the recess is placed “essentially midway” along the taper. Although Plaintiffs argue that the securement features can be placed in a host of “relative locations,” there is no support for this contention in the specification or other intrinsic evidence. For instance, as DePuy argued at the Markman hearing, “the specification does not disclose any alternative locations of the taper/recess that are ‘next to,’ ‘abutting,’ or

‘overlapping’ with each other.” (Defs. ’243 Markman PP at 44.) In essence, the patent teaches that the effectiveness of the securing elements is maintained when the recess is placed essentially midway along the taper.

Additionally, with respect to claim differentiation, as the Supreme Court has held, “[c]laim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated.” Autogiro Co. of America v. United States, 384 F.2d 391, 404 (1967); see also Seachange Int’l, Inc. v. C-COR Inc., 413 F.3d 1361, 1369 (Fed. Cir. 2005) (noting that claim differentiation is “not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history”). As previously articulated, the specification does not provide any additional configurations that would be effective in securing the elements in the presence of one another. Although there are dependent claims in this instance, the lack of any other configurations that would similarly maintain the effectiveness of the securing elements overcomes the doctrine of claim differentiation. See O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576 (Fed. Cir. 1997) (“Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history.”) (citing Hormone Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1576 n. 15 (Fed. Cir. 1990)); Retractable Techs., Inc. v. Becton, Dickinson and Co., 653 F.3d 1296, 1305 (Fed. Cir. 2011) (“[A]ny presumption created by the doctrine of claim differentiation ‘will be overcome by a contrary construction dictated by the written description or prosecution history.’”) (citing Seachange Int’l, Inc., 413 F.3d at 1369).

Based on the intrinsic evidence, this Court finds that the disputed language related to the location of the recess relative to the taper including “juxtaposed with” means “the recess is essentially midway along the taper such that the effectiveness of each is not compromised.”

**e. “bearing member”**

Plaintiffs and Defendants disagree on the construction of “bearing member” as it appears in claim 20. The terms “bearing member” appear in claim 20 in the following context:

wherein the bearing member includes an external securing surface, and the second securing surface includes an internal securing surface, the external securing surface and the internal securing surface having complementary tapered configurations for interlocking in response to seating engagement of the complementary tapered configurations; and  
 wherein the bearing member includes a rib projecting from the bearing member, and the first securing element includes a recess in the shell member for receiving the rib of the bearing member, the tapered configuration of the internal securing surface extends between an upper end and a lower end.

(U.S. Patent No. '243, Reexam., Cl. 20 (issued Dec. 7, 2010) (emphasis added); Pls. Op. Br. 27; Defs. Op. Br. 37.) Plaintiffs contend that “bearing member” as used in claim 20 should be construed as “bearing member that could be chosen.” (Pls. Op. Br. 27.) Defendants contend that “bearing member” as used in claim 20 should be construed as “a single bearing member including both a complementary interlocking taper structure and a rib projecting from the bearing member.” (Defs. Op. Br. 37-38.)

First, both parties rely on intrinsic evidence in support of their proposed constructions of “bearing member.” Specifically, both parties refer to the language in claim 20’s preamble which recites:

20. An assembly having a shell member and an internal bearing member for selective securement within the shell member interoperatively, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics

corresponding to the characteristics of the selected internal bearing member, the shell member comprising . . .

(U.S. Patent No. '243, Reexam., Cl. 20 (issued Dec. 7, 2010); Defs. Op. Br. 38; Pls. Op. Br. 27.)

Based on the language in the preamble, Defendants contend that claim 20 refers to a single internal bearing member that is actively selected. (Defs. Op. Br. 38.) Furthermore, Defendants assert that the disputed claim language—namely the two “wherein clauses”—requires that the bearing member have both a tapered outer surface and a rib to lock into a recess. (*Id.*) In support of this construction, Defendants focus on the term “the” before “bearing member” to argue that the selected bearing member must have all of the securing elements recited in both clauses.<sup>15</sup>

U.S. Patent No. '243, Reexam., Cl. 20 (issued Dec. 7, 2010).

To the contrary, Plaintiffs argue that “a person of ordinary skill in the art reading claim 20 would understand that the bearing member of the claimed assembly can be selected from different bearing members that each have different securement characteristics.” (Pls. Op. Br. 28.) Plaintiffs further contend that consistent with the alternate bearings described repeatedly throughout the specification, the disputed language in the “wherein” clauses describes these different bearings and their securement mechanisms. (Pls. Resp. Br. 23.) The first clause describes a bearing member with an external securing surface and a taper mechanism—such as a ceramic or metal bearing. (*Id.* at 23-24.) The second clause describes a bearing member with a rib mechanism—such as a polyethylene bearing. (*Id.* at 23-24.)

Defendants accurately couch this dispute as “whether [Plaintiffs] should be permitted to read the phrase ‘that could be chosen’ into the claim, or whether the claim language should be construed as written.” (Defs. Op. Br. 37.) Defendants claim that Plaintiffs’ proposed

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<sup>15</sup> Defendants rely on Warner-Lambert Co. v. Apotex Corp., which states that “[i]t is a rule of law well established that the definite article ‘the’ particularizes the subject which it precedes. It is a word of limitation as opposed to the indefinite or generalizing force of ‘a’ or ‘an.’” (Defs. Resp. Br. 37 (citing Warner-Lambert Co. v. Apotex Corp., 316 F.3d 1348, 1356 (Fed. Cir. 2003) (citations omitted))).

construction has no basis in the claim language as it improperly seeks to insert the words “could be chosen.” (*Id.* at 38-39.) This Court agrees with Defendants that the words “could be chosen” should not be read into the claim. Additionally, this Court agrees with Defendants that the claim language should be construed as written. Defendants’ proposed construction, however, does not construe the claim language as written and is inconsistent with the existence of the alternate bearings described repeatedly throughout the specification. See U.S. Patent No. ’243, at col.5:11-21, 55-60, col.6:12-14, col.9:11-19, col.10:43-46 (issued Nov. 5, 2002). Ironically, Plaintiffs’ interpretation of the claim language—that the “wherein” clauses describe alternative bearings—appears to comport with the plain and ordinary meaning of the claim language as it would be understood by an ordinary person skilled in the art. The first “wherein” clause describes a bearing member including an external hard surface (i.e. ceramic or metal bearing). The second “wherein” clause describes a bearing member with a rib projecting securement mechanism (i.e. polyethylene bearing). Nothing in the patent itself, briefing, or arguments suggests that what was intended with these clauses was a single bearing member with both a taper mechanism and rib mechanism. Indeed, no embodiment using both securing mechanisms is described in the ’243 Patent.<sup>16</sup> Instead, a reasonable understanding of the claim language suggests that a single bearing member is ultimately chosen from a plurality of bearing members, such as one with a taper mechanism or one with a rib mechanism.

Rather than provide clarification to the plain language, the parties’ constructions needlessly complicate the otherwise understandable claim language. Thus, in light of the claim language and this Court’s analysis, “bearing member” does not need to be construed and should be given its plain and ordinary meaning.

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<sup>16</sup> The Court notes that DePuy’s arguments regarding construction of the terms “selective . . . for effective selective securement” further establish this point. (DePuy Supplemental Opening Markman Brief (“DePuy Suppl. Op. Br.”) at 2-3, 3 n. 1)

**f. “selectable . . . effective selective securement”**

Plaintiffs and DePuy disagree on the construction of “selectable . . . for effective selective securement” as it appears in claims 20, 27, and 41.<sup>17</sup> The remaining Defendants—Wright, S&N, and Zimmer—assert that these terms do not require construction. Plaintiffs argue that “selectable . . . for effective selective securement” should be construed as “can be chosen to be secured by its securement features so as to remain within the shell cavity.”<sup>18</sup> DePuy argues that “selectable . . . for effective selective securement” should be construed as “requires that the selected bearing be effectively secured by one securing structure or the other, but not both.” It appears that the parties’ proposed constructions are substantially similar. The key dispute is that DePuy’s construction includes the limitation that both securing elements cannot be selected whereas Plaintiffs’ proposed construction does not. (Pls. Op. Br. 26.)

Plaintiffs argue that the disputed terms should be considered in the context of claim 20’s language as a whole. Claim 20 recites:

the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly interoperatively[.]

U.S. Patent No. ’243, Reexam., Cl. 20 (issued Dec. 7, 2010). Plaintiffs argue that in this context, alternate bearings can be chosen to be secured within the shell. (Pls. Op. Br. 25-26.) According to Plaintiffs, nothing in the claim language requires that only one type of bearing be selected for

<sup>17</sup> The disputed language in claim 20 is as follows: “is selectable for effective selective securement within the shell member.” (U.S. Patent No. ’243, Reexam., Cl. 20 (issued Dec. 7, 2010); Pls. Op. Br. 25; DePuy. Suppl. Op. Br. 1.) The disputed language in claims 27 and 41 is as follows: “is selectable for effective selective axial securement within the cavity of the shell member.” (U.S. Patent No. ’243, Cl. 27 (issued Nov. 5, 2002); U.S. Patent No. ’243, Reexam., Cl. 41 (issued Dec. 7, 2010); Pls. Open. Br. 25; DePuy Suppl. Op. Br. 1.)

<sup>18</sup> Plaintiffs note that they would be amenable to joining Defendants Zimmer, Wright, and S&N’s position that the terms not be construed at all and instead be given their plain and ordinary meaning. (Pls. Op. Br. 26 n. 11; Pls. Resp. Br. 20.)

securement as Defendants suggest. (*Id.* at 25-26.) In other words, Plaintiffs assert that “the language does not prevent additional support of another securement mechanism.” (*Id.* at 26.)

DePuy argues that the word “selective” requires that one bearing be effectively secured by one securing structure or the other, but not both. (DePuy Suppl. Op. Br. 2.) Furthermore, DePuy asserts that the specification does not describe or propose any type of bearing that includes both types of securement mechanisms—taper and rib securements. (*Id.* at 3.) DePuy also relies on the prosecution history of the ’243 Patent in support of its proposed construction. Specifically, DePuy notes that the Rule 1.131 Declaration submitted during reexamination of the ’243 Patent by Nicholas Dong—one of the inventors of the ’243 Patent—does not describe a bearing that is secured with both a rib and a taper. (*Id.* at 4 (citing Ex. C at ¶5, STRTRID00007671-7672, Ex. D at ¶¶ 5, 7-9, STRTRID00007699-7701).) Additionally, DePuy relies on remarks made in the March 16, 2010 Amendment which clarify that “whereby the selected bearing member would include a securing element compatible with one of the first or second securing elements in the shell member.” (Defs. ’243 Markman PP at 5.)

In reviewing the language in claim 20, the context for the disputed language is helpful, namely “whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly interoperatively.” The plain and ordinary meaning of this language suggests that “the one” bearing and “the another” bearing members are each selectable for effective securement within the shell member. However, nothing in the plain language indicates that more than one bearing member can be selected at the same time for securement. In fact, the briefing and Markman hearing made clear that only one bearing member can be secured in a shell at any given time and because there is no intrinsic evidence indicating that any bearing member engages both securing



elements (taper and rib), it would follow that only one securement element is engaged by each bearing member. Thus, only one securement element is “selectable” for effective securement. To the extent that one bearing is chosen and not actually secured, it can be argued that the alternative bearing member could still be chosen for securement. This, however, would not be effective “selective” securement.

Accordingly, this Court finds that it would be instructive to a jury and for purposes of clarifying the terms—as understood in the patent claim language and specification—to include the concept that only one bearing can be chosen for securement at any given time. Neither party’s proposed construction effectively captures this concept. Thus, a combination of the parties’ proposed constructions is appropriate here. This Court finds that “selectable [for] effective selective securement” means that it “requires that the selected bearing be effectively secured by one securing structure or the other, but not both simultaneously.”

**g. Language relating to securement tapers**

Plaintiffs and Defendants—with the exception of S&N—disagree about the language relating to the securement tapers as it appears in claims 20, 27, 41, and 53. The disputed language appears in the following context:

1. Claim 20: “the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members”;
2. Claim 27: “the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members”;
3. Claim 41: “the internal securement taper extending axially and being compatible with the outer securement taper of the at least one second internal bearing member of the plurality of internal bearing members to axially secure the second internal bearing member within the shell member”; and
4. Claim 53: “the internal securement taper is compatible with the outer securement taper of the second internal bearing member of the plurality of internal bearing members to axially secure the second internal bearing member with the shell.”

(U.S. Patent No. '243, Reexam., Cl. 20, 41, 53 (issued Dec. 7, 2010); U.S. Patent No. '243, Cl. 27 (issued Nov. 5, 2002).) Defendants propose the following construction for the disputed language: “requires that the internal taper of the shell mates with the external taper of a sleeve secured to and separate from the bearing member.” (Defs. Op. Br. 31.) Plaintiffs do not offer a construction for these terms and argue that the ordinary meaning applies. (Pls. Op. Br. 29.) S&N agree with Plaintiffs that no construction is required for these terms. (Id.; Defs. Op. Br. 30 n. 11.)

In support of their proposed construction, Defendants assert that the '243 Patent explains that the tapered securing surface of the shell is compatible with a bearing only by using an intervening sleeve. (Defs. Op. Br. 32.) Further, Defendants point to the prosecution history where Plaintiffs described the acetabular shell as capable of accepting plastic, ceramic, or metal liners where a “titanium adapter” or sleeve is necessary to use the ceramic or metal liner. (Id. at 33 (citing Ex. 4, at SRTRID00007699-700).) Additionally, Defendants argue that the patent acknowledges that the hard bearings (*i.e.* ceramic or metal) do not work with the “snap-fit connection” into the shell. (Id. (citing U.S. Patent No. '243 at col.5:32-41, col.6:20-25 (issued Nov. 5, 2002)).) The patent further explains that a securing sleeve is needed to facilitate the “tapered” connection for hard bearings. (Defs. Op. Br. 33.) Additionally, Defendants note that the patent describes three embodiments using a tapered connection and all of them illustrate a bearing secured to the shell with an intervening sleeve. (Id. at 34 (citing U.S. Patent No. '243 at col.6:20-7:10, col.7:24-8:5, col.10:31-11:30 (issued Nov. 5, 2002)).)

Plaintiffs argue that Defendants' proposed construction which includes the word “sleeve” has no basis in the claim language. (Pls. Op. Br. 30.) Specifically, Plaintiffs note that the word sleeve does not appear anywhere in the asserted claims. (Id.) Plaintiffs further argue that “the

asserted claims recite the ‘two piece’ acetabular cup assemblies described in the patent as comprising a shell component and a bearing component.” (*Id.*) Plaintiffs also contend that “‘three-piece’ assemblies are expressly claimed in unasserted claims of the ’243 Patent.” (*Id.*) At bottom, Plaintiffs argue that the disputed language should be given its plain and ordinary meaning.

It is appropriate for this Court to first consult the intrinsic evidence related to the disputed language. Bristol-Myers Squibb Co., 86 F. Supp. 2d at 448. This Court agrees with Plaintiffs that the word “sleeve” does not appear in the patent itself. However, a review of the patent specification reveals that the inventor contemplated that the use of a “metallic securing member” or a sleeve to assemble hard bearings to the shell. U.S. Patent No. ’243 at col.2:1-18, col.8:6-14 (issued Nov. 5, 2002) (identifying securing sleeve as part of “the present invention”). Importantly, based on documents disclosed during the prosecution of the patent, Stryker conceded that the contemplated ceramic or metal liner could only be assembled with the shell by using adaptor sleeves. (*See* Dkt. 79, Ex. 4, at SRTRID00007699-701.) In essence, Plaintiffs are attempting to claim a two-piece assembly using a tapered connection without a sleeve; however there is no evidence that Stryker contemplated a hard bearing being secured to the shell without a sleeve. Indeed, at the Markman hearing, when asked about whether Plaintiffs had an embodiment where a hard bearing could be secured to the shell without a sleeve, Plaintiffs counsel conceded that none existed. (Markman Hrg. Tr. at 174 (May 2, 2013).)

Accordingly, this Court concludes that the disputed claim language is construed to mean “requires that the internal taper of the shell mates with the external taper of a metallic securing member (*i.e.* sleeve) secured to and separate from the bearing member.”

## **The '097 Patent**

Plaintiffs and DePuy seek claim construction for fourteen disputed claim terms in connection with the '097 Patent. These terms will be addressed categorically as follows: location terms, connection terms, anti-rotation terms, bearing terms, and typographical errors.

### **Location Terms**

Plaintiffs and DePuy dispute the meaning of “between” and “cavity” as they appear in the context of six claim terms. These six claim terms relate to the location of elements relative to either the “shell cavity” or the “bearing cavity.” The disputed terms include the following:

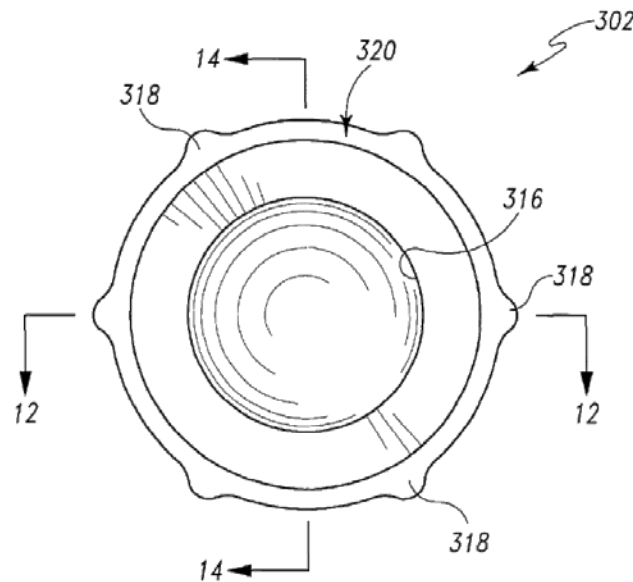
1. Claim 1: “a female taper between said locking recess and said shell cavity”;
2. Claim 1: “a male taper between said locking member and said bearing cavity”;
3. Claim 9: “a female taper between said anti-rotation recesses and said shell cavity”;
4. Claim 9: “a male taper between said anti-rotation protrusions and said bearing cavity”;
5. Claim 14: “a locking recess disposed between said anti-rotation recesses and said shell cavity”; and
6. Claim 14: “a locking member disposed between said anti-rotation protrusions and said bearing cavity.”

U.S. Patent No. '097, Cl. 1, 9, 14 (issued Aug. 26, 2003). These six claim terms—namely the construction of “between” and “cavity”—will be addressed in tandem as they present common issues to be resolved uniformly.

Plaintiffs argue that the term “between” should be construed as “located in the space that separates.” (Pls. Op. Br. 8.) Plaintiffs state that their proposed construction is supported by the intrinsic record and they identify Figures 8-12 for support. (*Id.*) Plaintiffs also reference a dictionary definition which defines “between” to mean “in the time, space, or interval that separates.” (*Id.* (citing Merriam-Webster’s Collegiate Dictionary, App. E4).)

Plaintiffs argue that the word “cavity” should be construed as “the interior volume defined by the shell/bearing.” (Pls. Op. Br. 8.) Plaintiffs contend that the claim language

supports this construction. For instance, the claim language requires “a shell defining a shell cavity” and a “bearing defining a bearing cavity.” (*Id.* at 8-9 (citing U.S. Patent No. ’097, Cl. 1 (issued Aug. 26, 2003).) Additionally, Plaintiffs reference Figure 11 illustrating that “the cavity is the space inside the bowl of the bearing labeled as item 316 below.”



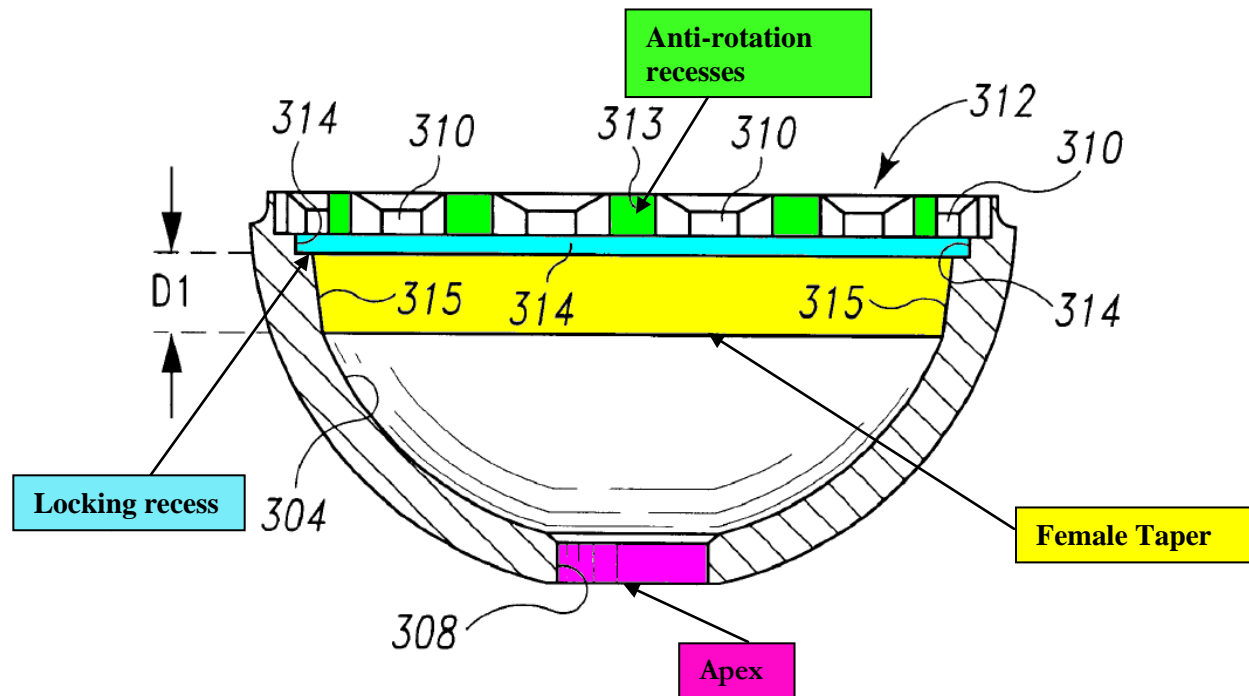
U.S. Patent No. ’097, Fig. 11 (issued Aug. 26, 2003). Plaintiffs note that the bearing fits in the entire interior volume of the shell and would not fit “into” something smaller. (Pls. Op. Br. 9.) Thus, Plaintiffs argue that the cavity should be construed as “the interior volume defined by the shell/bearing.”

DePuy does not offer a specific construction for “between” and instead argues that the disputed language should include “is located, in an axial direction” before the word “between.” (DePuy’s Opening Markman Brief (“DePuy Op. Br.”) at 11.) Additionally, DePuy contends that “cavity” should be construed to mean “the apex of the shell.” (*See id.*) According to DePuy, their proposed construction is based on the location of the connection mechanisms, and the way that the term “cavity” is used in that particular context. (DePuy’s Responsive Markman Brief

(“DePuy Resp. Br.”) at 8.) DePuy states that the patent specification supports this proposed construction. For instance, DePuy points to following language in the ’097 Patent:

The shell 300 possesses a plurality of tangs 310 located at an upper rim 312 of the shell 300. Each of the plurality of tangs 310 extends inwardly toward the center of the shell 300 as shown in FIG. 8. The plurality of tangs 310 define a plurality of anti-rotation recesses 313 which are evenly spaced around the upper rim 312 of the shell 300 as shown in FIG. 8. The shell 300 also includes an annular recess 314 which is positioned immediately below the plurality of tangs 310 (see FIGS. 8 and 9). The shell 300 also includes a female taper 315 which is defined in an inner surface of the shell as shown in FIG. 9. The female taper 315 extends around the entire periphery of the cavity 304 of the shell 300. Moreover, the female taper 315 extends axially for a distance D1 near its upper rim 312 as shown in FIG. 9.

(DePuy Op. Br. 11-12 (citing Ex. A, U.S. Patent No. ’097 at col.6:64 – col.7:11 (issued Aug. 26, 2003))).) DePuy argues that in simpler terms, this language means that the anti-rotation recesses are near the upper rim of the shell; the annular recess is below that moving toward the apex of the shell; and the female taper extends around the entire periphery of the cavity. (DePuy Op. Br. 12.) DePuy also cites to figures in support of their proposed construction. For instance, DePuy argues that in Figure 9, as reproduced below, the female taper is located in an axial direction between the locking recess and the apex of the shell. (Id.)



(DePuy Op. Br. 13; U.S. Patent No. '097, Fig. 9 (issued Aug. 26, 2003).)

First, Plaintiffs' proposed construction of "between" as "located in the space that separates" is not rooted in intrinsic evidence and is merely a dictionary definition. In this instance, it is not appropriate to reference dictionary definitions or any other extrinsic evidence because the claim language is not ambiguous. See Vitronics Corp., 90 F.3d at 1585 (noting that it is unnecessary and, hence, legally incorrect to rely on extrinsic evidence when the specification clearly and unambiguously defines disputed claim term). The intrinsic evidence—namely the claim language—can guide this Court effectively in construing "between." Furthermore, Plaintiffs' construction of "between" is vague and may confuse, rather than aid, a jury. Similarly, DePuy's proposed construction of the disputed claim language "is located, in an axial direction" would not serve to aid the jury. Reading the disputed claim language in various contexts, this Court finds that construction of the claim term "between" is not necessary because

its plain and ordinary meaning is clear. Nevertheless, this Court agrees with DePuy that reading in the words “is located” before “between” would clarify the disputed language for a jury.

Next, Plaintiffs’ construction of cavity being the entire volume of the shell is broad and does not necessarily comport with the intent of the inventors based on the specification. Plaintiffs state that their proposed construction is supported by the intrinsic record, but fail to articulate anything particular in the claim language or patent specification for support other than pointing to various figures. Additionally, Plaintiffs’ proposed construction would not aid the jury in further understanding or clarifying the disputed language. Likewise, DePuy’s proposed construction of “cavity” unnecessarily complicates the meaning of the word. This Court finds that “cavity” should be given its plain and ordinary meaning and does not require construction.

Accordingly, this Court finds that the disputed language shall be given the following meanings. First, as used in claim 1, “a female taper between said locking recess and said shell cavity” means “a female taper is located between said locking recess and said shell cavity.” Second, as used in claim 1, “a male taper between said locking member and said bearing cavity” means “a male taper is located between said locking member and said bearing cavity.” Third, as used in claim 9, “a female taper between said anti-rotation recesses and said shell cavity” means “a female taper is located between said anti-rotation recesses and said shell cavity.” Fourth, as used in claim 9, “a male taper between said anti-rotation protrusions and said bearing cavity” means “a male taper is located between said anti-rotation protrusions and said bearing cavity.” Fifth, as used in claim 14, “a locking recess disposed between said anti-rotation recesses and said shell cavity” means “a locking recess is located between said anti-rotation recesses and said shell cavity.” Lastly, as used in claim 14, “a locking member disposed between said anti-rotation



protrusions and said bearing cavity” means “a locking member is located between said anti-rotation protrusions and said bearing cavity.”

### **Connection Terms**

Plaintiffs and DePuy disagree about the meaning of two “connection” terms: (1) the taper-taper connection, and (2) the locking member-locking recess connection. The disputed language—although substantially similar—will be addressed individually as they appear in different contexts.

#### Taper-Taper Connection

The disputed language relating to the taper-taper connection appears in claims 1 and 9 in the following context: “wherein when said bearing is positioned within said shell cavity, (i) said male taper and said female taper engage each other to provide a first connection between said bearing and said shell.” U.S. Patent No. ’097, Cl. 1, 9 (issued Aug. 26, 2003). Plaintiffs argue that these terms should be construed to mean “wherein when said bearing is positioned within said shell cavity, (i) said male taper and said female taper come together to restrict relative motion between each other to provide a first locked association between said bearing and said shell.” (Pls. Op. Br. 14.) DePuy argues that the terms should mean “when the bearing is placed within the shell, the male taper of the bearing engages the female taper of the shell; this is a first connection between the bearing and shell.” (DePuy Op. Br. 19.)

As a preliminary matter, Plaintiffs contend that “engage” means “to come together and restrict relative motion.” (Pls. Resp. Br. 13.) At the Markman hearing, DePuy noted that it “does not oppose this aspect of Styker’s proposed construction.” (DePuy ’097 Patent Markman Powerpoint Presentation (“DePuy ’097 Markman PP”) at 17; Markman Hrg. Tr. at 31 (May 9, 2013).) Because “engage” should be given its plain and ordinary meaning, it is unnecessary to

construe this term specifically. The key dispute between the proposed constructions relates to whether there is a “locked” connection. Plaintiffs argue that there is a “locked association” between the bearing and the shell whereas DePuy does not.

In support of their proposed construction, Plaintiffs rely first on intrinsic evidence. As explained in the patent specification, “[t]he taper feature of the present invention provides mechanical lock integrity . . . .” (Pls. Op. Br. 15 (citing U.S. Patent No. ’097, col.6:3-4).) Plaintiffs note that the specification expressly states that the purpose of tapers is to secure the bearing in the shell. (*Id.*) Once the shell and bearing have been engaged, Plaintiffs argue that a “locked association” is created. (*Id.* at 16.) Plaintiffs assert that the specification recites that the tapers “engage and lock” the bearing within the shell. (*Id.* (citing U.S. Patent No. ’097 at col.7:37-42, col.6:27-29 (issued Aug. 26, 2003)).)

DePuy argues that the specification makes clear that the tapers have a “connection” to maintain alignment, but there is no requirement that there be a “locked association.” (DePuy Op. Br. 21 (citing Ex. A, U.S. Patent No. ’097 at col.5:1-5 (issued Aug. 26, 2003)).) DePuy notes that the specification explicitly states that tapers “may be a self-holding taper (*i.e.* self-locking) or a self releasing taper.” (DePuy Op. Br. 20 (citing Ex. A, U.S. Patent No. ’097 at col.5:5-6 (issued Aug. 26, 2003)).) DePuy contends that requiring a “locked” connection essentially reads out the “self-locking” limitation of dependent claim 4. (*Id.*)

This Court agrees with DePuy that the patent claim language and specification do not require that the “connection” be a “locked” association. Even putting aside the “self-locking” embodiment for which both Plaintiffs and DePuy put forth arguments, nothing in the intrinsic evidence suggests that the connection must be “locked.” This Court concludes that DePuy’s proposed construction is appropriate here. Thus, the disputed language “wherein when said

bearing is positioned within said shell cavity, (i) said male taper and said female taper engage each other to provide a first connection between said bearing and said shell” will be construed as “when the bearing is placed within the shell, the male taper of the bearing engages the female taper of the shell; this is a first connection between the bearing and shell.”

#### The Locking Member-Locking Recess Connection

The disputed language relating to the locking member-locking recess connection appears in claim 14 and states the following: “wherein when said bearing is positioned within said shell cavity, (i) said locking member is positioned within said locking recess to provide a first connection between said bearing and said shell.” U.S. Patent No. ’097, Cl. 14 (issued Aug. 26, 2003). Plaintiffs argue that the disputed language should be construed as “wherein when said bearing is positioned with said shell cavity, said locking member is positioned within said locking recess to provide a first locked association between said bearing and said shell.” (Pls. Op. Br. 18.) DePuy argues that the disputed language should mean “when the bearing is placed within the shell, a locking member on the bearing is positioned within a locking recess on the shell, providing a first connection between said bearing and the shell.” (DePuy Op. Br. 22.)

As previously discussed with respect to the taper-taper connection, the key dispute between the proposed constructions is whether there is a “locked” connection. Plaintiffs argue that there is a “locked” association whereas DePuy asserts there is not. (See Pls. Op. Br. 18; see also DePuy Op. Br. 22.) Plaintiffs and DePuy rely significantly—if not completely—on the same arguments made with respect to the taper-taper connection. (See Pls. Op. Br. 18; see also DePuy Op. Br. 22; Pls. Resp. Br. 15-16; DePuy Resp. Br. 14-15.)

For the same reasons articulated with respect to the taper-taper connection, this Court finds that the intrinsic evidence does not require that the locking member-locking recess

connection be a “locked association.” The term “locked” does not appear in the claim language or patent specification. Including the word “locked” is too specific and potentially misleading as it is not based in the patent. Defendants’ proposed construction provides a clear construction of the disputed language. Accordingly, this Court concludes that “wherein when said bearing is positioned within said shell cavity, (i) said locking member is positioned within said locking recess to provide a first connection between said bearing and said shell” will be construed as “when the bearing is placed within the shell, a locking member on the bearing is positioned within a locking recess on the shell, providing a first connection between said bearing and the shell.”

### **Anti-Rotation Terms**

Plaintiffs and DePuy dispute the meaning of two “anti-rotation” terms relating to recesses in the shell and protrusions on the bearing. The disputed language relating to both terms appears in the following context in claim 5: “anti-rotation recesses defined in said inner surface” and “anti-rotation protrusions in said outer surface.” U.S. Patent No. ’097, Cl. 5 (issued Aug. 26, 2003). Although relating to different parts of the shell and the bearing, claim construction of these terms will be addressed simultaneously because the arguments and disputes are substantially similar.

Plaintiffs argue that the disputed language relating to anti-rotation recesses should be construed as “depressions defined in the inner surface of the shell to receive protrusions to prevent rotation of the bearing within the shell.” (Pls. Op. Br. 20.) DePuy argues that the disputed language relating to anti-rotation recesses means “anti-rotation recesses are in the inner surface of the shell.” (DePuy Op. Br. 23.)

Plaintiffs argue that the disputed language relating to anti-rotation protrusions should be construed as “extensions extending from the outer surface of the bearing to prevent rotation of the bearing within the shell.” (Pls. Op. Br. 22.) DePuy argues that the disputed language relating to anti-rotation protrusions should be construed as “anti-rotation protrusions are in the outer surface of the bearing.” (DePuy Op. Br. 23.)

There are two key disputes at issue with respect to the claim construction of the anti-rotation terms. First, Plaintiffs seek to clarify the meaning of the words “recess” and “protrusions” while DePuy does not. Secondly, Plaintiffs use the word “prevent” in their proposed constructions to clarify “anti-rotation” of the bearing within the shell while DePuy argues that the anti-rotation protrusions and recesses were designed only to “inhibit” rotational movement.

#### Recesses/Protrusions

In construing the disputed language, it is appropriate to first consider the intrinsic evidence. First, as it relates to the “recesses,” Plaintiffs point to Figure 8 which illustrates the “depressions or indentations in the shell’s inner rim.” (Pls. Op. Br. 21; U.S. Patent No. ’097, Fig. 8 (issued Aug. 26, 2003).) Plaintiffs argue that “[i]f the recesses were not depressions, the bearing’s protrusions could not be accommodated ‘within’ them as the ‘097 Patent requires.” (Pls. Op. Br. 21.) With respect to the “protrusions,” Plaintiffs’ reference to Figure 11 demonstrates that the protrusions or “extensions” on the bearing fit within the recesses of the shell. (*Id.* at 22-23.) Plaintiffs concede that their “constructions [are] only necessary to ensure that, through its infringement contentions, DePuy was not seeking to expand the scope of its patents to cover protrusions that were really recesses and vice versa.” (Pls. Resp. Br. 19-20.)

DePuy asserts that the terms “recesses” and “protrusions” should be given their plain and ordinary meaning. (DePuy Op. Br. 25.) DePuy opposes Plaintiffs’ proposed inclusion of “depressions” for “recesses” and “extensions” for “protrusions” because it potentially “add[s] heightened functional requirements into the claims.” (*Id.* at 24.) DePuy notes that the words “depression” and “extension” do not appear in the ’097 Patent. (*Id.* at 24-25.)

Based on the claim language and patent specification, this Court finds that it is unnecessary to include the words “depressions” for “recesses” and “extensions” for “protrusions” in construing the disputed language. The terms “recesses” and “protrusions” do not present any ambiguity. Moreover, the words “depressions” and “protrusions” are merely synonyms which do not serve to clarify their meanings. Patriot Universal Holdings, LLC et al v. Formax, Inc., No. 10-C-355, 2011 U.S. Dist. LEXIS 60760, at \*52 (E.D. Wis. June 7, 2011) (noting that “[c]laim construction is not an invitation to substitute synonyms”). Thus, the terms “recesses” and “protrusions” will be given their plain and ordinary meaning.

#### Anti-rotation Function

In proposing a construction for the term “anti-rotation,” Plaintiffs point to the patent specification which states that the “anti-rotation” function provides that the “rotational movement of the bearing [ ] relative to the shell [ ] is inhibited.” U.S. Patent No. ’097 at col.8:57-59 (issued Aug. 26, 2003). Plaintiffs also note that the patent specification states that the projections “prevent rotation” of the bearing. (Pls. Resp. Br. 20 (citing U.S. Patent No. ’097 at col.4:5-8 (issued Aug. 26, 2003)).)

DePuy argues that “the anti-rotation protrusions/recesses were designed to ‘inhibit’ rotational movement, and the patent does not require such movement to be completely prevented.” (DePuy Op. Br. 25-26 (citing Ex. A, U.S. Patent No. ’097 at col.7:63-65, col.8:57-

59 (issued Aug. 26, 2003)).) Additionally, DePuy argues that only dependent claim 5 requires that there rotational movement be inhibited. (DePuy Op. Br. 26.) However, claims 9 and 14 only require a “second connection” between the shell and the bearing. (Id.) DePuy argues that Plaintiffs are attempting to read limitations from the specification into the claims in their proposed construction.

In construing the “anti-rotation” function aspect of the disputed claim language, this Court finds that including the word “prevent” rotational movement is too specific and potentially confusing. The word “anti-rotation” sufficiently describes the feature to be conveyed and does not require further construction.

Based on the intrinsic evidence and the arguments presented, this Court agrees with DePuy’s proposed constructions relating to the anti-rotation terms in dispute. Accordingly, “anti-rotation recesses defined in said inner surface” is construed as “anti-rotation recesses are in the inner surface of the shell.” Additionally, “anti-rotation protrusions defined in said outer surface” is construed as “anti-rotation protrusions are on the outer surface of the bearing.”

### **Bearing Term**

Plaintiffs and DePuy dispute the meaning of “bearing” as it appears and is used in claims 1, 3, 5, 7, 9, and 12-15. Plaintiffs argue that “bearing” should be construed as “a unitary structure (as opposed to a liner/bearing subassembly) of a given material with an outer surface that is generally hemispherical in shape, and an inner surface configured to receive a prosthetic femoral ball.” (Pls. Op. Br. 27.) DePuy argues that “bearing” should be given its plain and ordinary meaning. (DePuy Op. Br. 27.)

Plaintiffs make clear that they seek a limited construction of the term “bearing” in an effort to prevent DePuy from “assert[ing] its patent against a three-piece Stryker product.” (Pls.

Op. Br. 27.) Plaintiffs contend that “DePuy has thus far refused to acknowledge that its claimed ‘bearing’ does not encompass a liner/bearing subassembly, thus necessitating construction of the term by this Court.” (Pls. Resp. Br. 24.) Plaintiffs reference the PTO’s restriction that DePuy limit its claims.

DePuy repeatedly argues that the term “bearing” is not ambiguous and should be given its plain and ordinary meaning. A bearing is the part that receives the femoral head, according to DePuy. (DePuy Op. Br. 27; DePuy Resp. Br. 18.)

Based on the claim language and intrinsic evidence, this Court finds that the term “bearing” is not ambiguous and does not require construction. Moreover, Plaintiffs’ argument in support of its proposed construction relies heavily on the fact that the PTO restricted DePuy to limit its claims to either the two-piece or three-piece claims. However, several courts have articulated that restriction requirements are administrative tools and do not help inform courts with respect to claim construction. See e.g., Colorquick v. Eastman Kodak Co., No. 06-390, 2008 U.S. Dist. LEXIS 48739, at \*34 (E.D. Tex. June 25, 2008) (“[A]s noted by the significant number of other courts refusing to use restriction requirements to limit the claims during claim construction, a restriction requirement is an administrative tool, and therefore offers little guidance in construing the claim language.”); see also Amersham Pharmacia Biotech, Inc. v. Perkin-Elmer Corp., No. C-97-04203, 2000 U.S. Dist. LEXIS 22942, \*43-44 (N.D. Cal. Feb. 28, 2000) (“A restriction requirement is not a rejection and it cannot be used to controvert the plain language of the claim.”). In light of the relevant case law and arguments set forth in the briefs and at the Markman hearing, this Court does not find it appropriate to construe this term. Accordingly, the term “bearing” will be given its plain and ordinary meaning.



### **Typographical Errors/ Incomplete, Incorrect, or Indefinite Terms**

It is within a district court's power to "correct obvious minor typographical and clerical errors in patents" but "major errors are subject only to correction by the PTO." Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1357 (Fed. Cir. 2003). A district court may correct an error in a patent if "(1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1353 (Fed. Cir. 2009) (citing Novo Indus. L.P., 350 F.3d at 1357). "Those determinations must be made from the point of view of one skilled in the art." Ultimax, 587 F.3d at 1353.

Plaintiffs and DePuy dispute the meaning of three claim terms in the '097 Patent that DePuy labels as "typographical errors." Each of the disputed claim terms will be addressed in turn.

#### ***"configured with, and (ii)"***

Plaintiffs and DePuy disagree about the meaning of "configured with, and (ii)" as it appears in claims 1, 9 and 14 as follows:

1. claim 1: "said bearing having an outer surface configured with, and (ii) a locking member extending outwardly therefrom and (ii) a male taper between said locking member and said bearing cavity";
2. claim 9: "said bearing having an outer surface configured with, and (ii) a second number of anti-rotation protrusions, and (ii) a male taper between said anti-rotation protrusions and said bearing cavity"; and
3. claim 14: "said bearing having an outer surface configured with, and (ii) a second number of anti-rotation protrusions, and (ii) a locking member disposed between said anti-rotation protrusions and said bearing cavity."

U.S. Patent No. '097, Cl. 1, 9, 14 (issued Aug. 26, 2003). Plaintiffs argue that the disputed language is ambiguous and therefore indefinite. (Pls. Op. Br. 12.) DePuy argues that

“configured with, and (ii)” was a typographical error and should be corrected to “configured with (i).” (DePuy Op. Br. 27-28.)

The relevant inquiries for this Court to determine are (1) whether the alleged correction is not subject to reasonable debate; and (2) whether the prosecution history does not suggest a different interpretation of the claims. It is appropriate to begin with the intrinsic evidence relating to the disputed language. First, it is helpful to review the disputed language in the context of the entirety of the claim. Claim 1, with the disputed language highlighted, reads as follows:

A prosthetic cup assembly, comprising:

a shell defining a shell cavity, said shell including an inner surface configured with (i) a locking recess defined therein, and (ii) a female taper between said locking recess and said shell cavity; and

a bearing defining a bearing cavity adapted to receive a prosthetic ball therein, said bearing having an outer surface configured with, and (ii) a locking member extending outwardly therefrom, and (ii) a male taper between said locking member and said bearing cavity,

wherein when said bearing is positioned within said shell cavity, (i) said male taper and said female taper engage each other to provide a first connection between said bearing and said shell, and (ii) said locking member is located within said locking recess to provide a second connection between said bearing and said shell.

U.S. Patent No. '097, Cl. 1 (issued Aug. 26, 2003) (emphasis added). The two other claims in dispute—claims 9 and 14—are similarly structured. See U.S. Patent No. '097, Cl. 9, 14 (issued Aug. 26, 2003). As seen in claim 1, there are three sets of romanettes. The first and third paragraphs contain romanettes (i) and (ii). The second paragraph contains romanettes (ii) and (ii). The parties do not dispute that the second paragraph—as written with the duplicate romanettes—does not say what it means.

Plaintiffs argue that the disputed language could mean, for instance, “said bearing having an outer surface configured with, ~~and (ii)~~ (i) a locking member extending outwardly therefrom, and (ii) a male taper between said locking member and said bearing cavity;” or “said bearing having an outer surface configured with (i) a generally hemispherical shape, and (ii) a locking member extending outwardly therefrom; and ~~(ii)~~(iii) a male taper between said locking member and said bearing cavity.” (Pls. Op. Br. 13.) According to Plaintiffs, because the disputed language could be subject to various interpretations, the claim language is ambiguous and indefinite.<sup>19</sup> (*Id.* at 12-14.)

On the other hand, DePuy contends that the only reasonable reading of the claim is that instead of duplicate romanettes, the second paragraph should have included romanettes (i) and (ii), similar to the first and third paragraphs. (DePuy Op. Br. 29.) DePuy also points to the prosecution history to demonstrate that claim 33 in the originally filed parent application to the ’097 Patent properly uses romanettes (i) and (ii) in each of the three paragraphs. (*Id.* at 29-30.)

Based on the intrinsic evidence, this Court finds that the disputed language resulted from a typographical error and should be corrected to properly use romanettes (i) and (ii). Despite Plaintiffs’ arguments, there is no reasonable debate regarding correcting the disputed language. None of Plaintiffs’ suggestions for alternate interpretations are reasonably viable. Additionally, the interpretation rendered from the correction is consistent with the prosecution history as well as the reasonable interpretation of the claim language. It is important to note that this Court is not construing the disputed terms here. Instead, as it is within the Court’s discretion to correct typographical errors, it is appropriate in this instance to correct the typographical error in claims

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<sup>19</sup> In order to conclude that a claim term is indefinite, a court must find that the term is “not amenable to construction” or is “insolubly ambiguous.” *See, e.g., IGT v. Bally Gaming Int’l, Inc.*, 659 F.3d 1109, 1119 (Fed. Cir. 2011).

1, 9, and 14. Accordingly, the disputed language “configured with, and (ii)” will be corrected to read “configured with (i).”

***“inner surface”***

Plaintiffs and DePuy disagree about the meaning of “inner” as it appears in dependent claims 2, 13, and 15 of the ’097 Patent. Specifically, the claim language in dispute is “and said locking member extends circumferentially around said inner surface of said bearing.” U.S. Patent No. ’097, Cl. 2, 13, 15 (issued Aug. 26, 2003). Plaintiffs’ proposed construction is identical to the claim language—“and said locking member extends circumferentially around said inner surface of said bearing.” (Pls. Op. Br. 19.) DePuy argues that the term “inner” in this context was a typographical error and should be corrected to “outer.” (DePuy Op. Br. 31.)

Plaintiffs contend that the patent specifically references and defines the “inner surface” of the bearing as the interior surface of the bearing. (See Pls. Op. Br. 19.) Furthermore, the specification notes that “Bearing 16 also includes an inner bearing surface 54 that defines an opening 55 sized to receive a prosthetic femoral ball.” (U.S. Patent No. ’097 at col.4:12-14 (issued Aug. 26, 2003); U.S. Patent No. ’097 at col.7:19-20 (issued Aug. 26, 2003); U.S. Patent No. ’097 at col.8:15-16 (issued Aug. 26, 2003).) Based on this intrinsic evidence, Plaintiffs argue that the disputed language should be given its plain and ordinary meaning.

DePuy contends that the use of “inner” rather than “outer” was a draftsman’s mistake. (DePuy ’097 Markman PP at 56.) DePuy argues that the claim language throughout the patent makes clear that the locking member is located on the outer surface of the bearing. (DePuy Op. Br. 32.) DePuy notes that “[s]uch a connection [between the shell and the bearing] would not be possible if the locking member was on the inner surface of the bearing.” (Id. at 32.) DePuy also

points to every figure in the patent which illustrates the locking member on the outer surface. (Id. at 33.)

In considering whether to correct the disputed language or adopt a proposed construction, this Court must consider (1) whether the alleged correction is not subject to reasonable debate and (2) whether the prosecution history does not suggest a different interpretation of the claims. See Ultimax Cement Mfg. Corp., 587 F.3d at 1353 (citing Novo Indus., LP, 350 F.3d at 1357). Importantly, the correction here is not subject to reasonable debate based on the intrinsic evidence. Throughout the claim language and patent specification, the '097 Patent identifies the locking member being located on the outer part of the bearing. Additionally, at the Markman hearing, except with reference to the particular disputed language, the parties consistently referred to the locking member on the outer surface and not the inner surface of the bearing in the context of the '097 Patent. (Markman Hrg. Tr. at 16, 66, 76 (May 9, 2013).) Furthermore, the prosecution history supports DePuy's position that the locking member was intended to be on the outer surface of the bearing. This Court notes guidance from the Federal Circuit which has "repeatedly and consistently . . . recognized that courts may not redraft claims, whether to make them operable or to sustain their validity." Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004). However, in this instance, it is clear that inclusion of the word "inner" instead of "outer" was a typographical error. Accordingly, to correct this error to "outer" rather than "inner" as intended by the inventor would not amount to redrafting the claim.

Moreover, as DePuy correctly notes, a claim construction that excludes the preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics Corp., 90 F.3d at 1583-84 ("[I]t is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read

the specification in such way.”) Here, if the locking member were on the inner surface of the bearing, every embodiment in the patent would be excluded. The only logical, reasonable interpretation of the disputed language is rendered by correcting the word “inner” to “outer.” This Court will not construe the disputed terms; instead, as it is within the Court’s discretion to correct typographical errors, it is appropriate in this instance to correct the typographical error. Thus, this Court concludes that “inner” as it appears in claims 2, 13, and 15 of the ’097 Patent will be corrected to “outer.”

***“said upper bearing rim”***

Plaintiffs and DePuy dispute the meaning of the claim term “and said first number of recesses is positioned adjacent said upper bearing rim” as it appears in dependent claim 7. Plaintiffs argue that if the disputed language is amenable to construction, it should mean “and said first number of recesses is positioned close to said upper edge of the bearing opposite its apex.” (Pls. Op. Br. 25.) Alternatively, Plaintiffs argue that the claim language be deemed indefinite. (*Id.*) DePuy argues that inclusion of the word “bearing” was a typographical error and should be corrected to “shell.” (DePuy Op. Br. 34-35.)

Plaintiffs point to figures 10 and 11 of the ’097 Patent to illustrate that the “upper bearing rim” is the “upper edge of the bearing opposite its apex.” (Pls. Op. Br. 25-26.) Specifically, for instance, Plaintiffs assert that figure 10 displays the apex of the bearing as opposite the opening of the bearing. (*Id.* at 25.) Based on these figures, Plaintiffs state that the intrinsic record supports their proposed construction. (*Id.* at 26.) Additionally, Plaintiffs contend that there is no antecedent basis for “said upper bearing rim” because no “upper bearing rim” is mentioned in claim 7 or any dependent claim stemming from claim 7. (*Id.* at 24); see Predicate Logic, Inc. v. Distributive Software, Inc., 544 F.3d 1298, 1305 06 (Fed. Cir. 2008) (“claim terms using ‘said’

are ‘anaphoric phrases, referring to the initial antecedent phrase’”). According to Plaintiffs, “said upper bearing rim” could either render the claim indefinite or refer to the bearing rim discussed in the specification. (Pls. Op. Br. 24-25.)

DePuy contends that “bearing” should be corrected to “shell” because it was a typographical error. (DePuy Op. Br. 34-35.) DePuy argues that the patent specification demonstrates that the anti-rotation recesses are positioned on the shell, and not the bearing. Specifically, DePuy points to figures 8 and 9 where the anti-rotation recesses are around the upper rim of the shell. (*Id.* at 35.)

In considering whether to correct the disputed language or adopt a proposed construction, this Court must consider (1) whether the alleged correction is not subject to reasonable debate and (2) whether the prosecution history does not suggest a different interpretation of the claims. See Ultimax Cement Mfg. Corp., 587 F.3d at 1353 (citing Novo Indus., LP, 350 F.3d at 1357). With respect to the disputed language, Plaintiffs and DePuy appear to focus on different aspects of the claim. Plaintiffs focus on the plain and ordinary meaning of the language of “upper bearing rim” as it appears in claim 7 and throughout the patent. DePuy focuses on the placement of the recesses, which reveals the typographical error of “bearing” intended to be “shell.” When reviewing this key disputed phrase “upper bearing rim” within the context of the full claim language, it is clear that the inventor was referring to the recesses located on the upper shell rim. The intrinsic evidence and Markman hearing discussions support this proposition as the ’097 Patent consistently describes the recesses on the “upper shell rim” and not the “upper bearing rim.” It is only in this claim, for the first time, that the recesses are described as being positioned on the “upper bearing rim” rather than the “upper shell rim” appears. Accordingly, this Court finds that there is no reasonable or logical debate regarding the correction from “bearing” to

“shell.” Furthermore, the prosecution history clearly supports that the inventors intended that the anti-rotation recesses be around the upper rim of the shell and not the bearing. (Pls. Op. Br., App. D at 3-6.) As it is within this Court’s power and discretion to correct minor errors, this Court concludes that the word “bearing” in claim 7 was a typographical error and will be corrected to read “shell.”

## **CONCLUSION**

For the reasons stated above, this Court orders that the disputed claims in the ’243 Patent and the ’097 Patent be construed as set forth in this Opinion. A summary of this Court’s construction of the disputed claims is provided in the corresponding Order.

s/ Susan D. Wigenton, U.S.D.J.

cc: Magistrate Judge Arleo



**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW JERSEY**

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,

Plaintiffs,

**V.**

DEPUY ORTHOPAEDICS, INC.,  
Defendants.

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,  
Plaintiffs,

**V.**

WRIGHT MEDICAL TECHNOLOGY,  
INC.,  
Defendant.

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,  
Plaintiffs,

V.

SMITH & NEPHEW, INC.,  
Defendant.

HOWMEDICA OSTEONICS CORP. and  
STRYKER IRELAND LTD.,  
Plaintiffs.

**V.**

ZIMMER, INC.,  
Defendant.

Civil Action No. 11-CV-6498  
11-CV-6499  
11-CV-6500  
11-CV-6511

(SDW) (MCA)

## ORDER (Markman Hearing)

July 9, 2013



8. “selectable [for] effective selective securement” means that it “requires that the selected bearing be effectively secured by one securing structure or the other, but not both simultaneously”; and
9. the language relating to the securement tapers means that “requires that the internal taper of the shell mates with the external taper of a metallic securing member (*i.e.* sleeve) secured to and separate from the bearing member”;

and it is further

**ORDERED** that the disputed terms as to the '097 Patent will be construed as follows:

1. “a female taper between said locking recess and said shell cavity” means “a female taper is located between said locking recess and said shell cavity”;
2. “a male taper between said locking member and said bearing cavity” means “a male taper is located between said locking member and said bearing cavity”;
3. “a female taper between said anti-rotation recesses and said shell cavity” means “a female taper is located between said anti-rotation recesses and said shell cavity”;
4. “a male taper between said anti-rotation protrusions and said bearing cavity” means “a male taper is located between said anti-rotation protrusions and said bearing cavity”;
5. “a locking recess disposed between said anti-rotation recesses and said shell cavity” means “a locking recess is located between said anti-rotation recesses and said shell cavity”;
6. “a locking member disposed between said anti-rotation protrusions and said bearing cavity” means “a locking member is located between said anti-rotation protrusions and said bearing cavity”
7. “wherein when said bearing is positioned within said shell cavity, (i) said male taper and said female taper engage each other to provide a first connection between said bearing and said shell” means “when the bearing is placed within the shell, the male taper of the bearing engages the female taper of the shell; this is a first connection between the bearing and shell”;
8. “wherein when said bearing is positioned within said shell cavity, (i) said locking member is positioned within said locking recess to provide a first connection between said bearing and said shell” means “when the bearing is placed within the shell, a locking member on the bearing is positioned within a locking recess on the shell, providing a first connection between said bearing and the shell”;

9. “anti-rotation recesses defined in said inner surface” means “anti-rotation recesses are in the inner surface of the shell”;
10. “anti-rotation protrusions defined in said outer surface” means “anti-rotation protrusions are on the outer surface of the bearing”;
11. “bearing” does not require construction and should be given its plain and ordinary meaning;
12. “configured with, and (ii)” as it appears in claims 1, 9, and 14 will be corrected to read “configured with (i)”;
13. “inner” as it appears in claims 2, 13, and 15—“and said locking member extends circumferentially around said inner surface of said bearing”—will be corrected to “outer”; and
14. “bearing” as it appears in dependent claim 7—“and said first number of recesses is positioned adjacent said upper bearing rim”—will be corrected to read “shell.”

s/ Susan D. Wigenton  
**Susan D. Wigenton, U.S.D.J.**

cc: Madeline Cox Arleo, U.S.M.J.

# APPENDIX B



(12) **United States Patent**  
**Sheldon et al.**

(10) **Patent No.:** **US 6,475,243 B1**  
(45) **Date of Patent:** **Nov. 5, 2002**

(54) **ACETABULAR CUP ASSEMBLY WITH  
SELECTED BEARING**

(75) Inventors: **Michael B. Sheldon**, Pymble (AU);  
**Nicholas N. G. Dong**, Little Falls, NJ  
(US)

(73) Assignee: **Howmedica Osteonics Corp.**,  
Allendale, NJ (US)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

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(22) Filed: **Sep. 19, 2000**

**Related U.S. Application Data**

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May 22, 1998.

(51) **Int. Cl.**<sup>7</sup> ..... **A61F 2/32**

(52) **U.S. Cl.** ..... **623/22.28; 623/22.21**

(58) **Field of Search** ..... 623/22.21, 22.24,  
623/22.25, 22.28, 22.26, 22.23, 22.17, 22.11,  
22.12, 22.13, 22.14, 22.15, 22.19

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*Assistant Examiner*—Alvin Stewart  
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(57) **ABSTRACT**

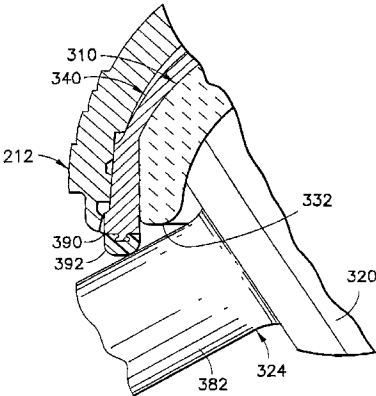
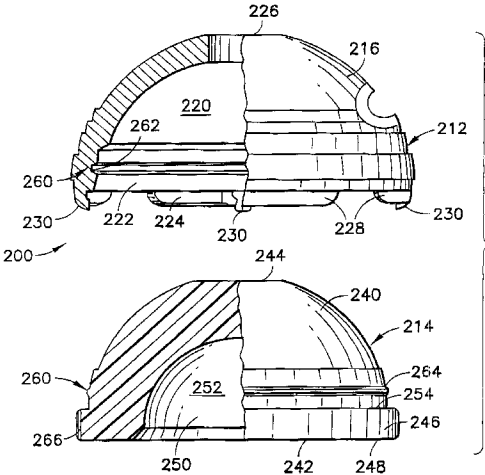
An acetabular cup assembly allows pre-operative or inter-operative selection and securement of a bearing member within a shell member of the acetabular cup assembly, the bearing member being selected from a plurality of bearing members having different characteristics, including bearing characteristics, securement characteristics, position characteristics and orientation characteristics, so as to enable a surgeon to select those characteristics most appropriate to a particular patient, as determined by a pre-operative assessment or by an evaluation of conditions encountered at an implant site during the implant procedure, and to incorporate the desired characteristics into the acetabular cup assembly with ease and economy.

**34 Claims, 13 Drawing Sheets**

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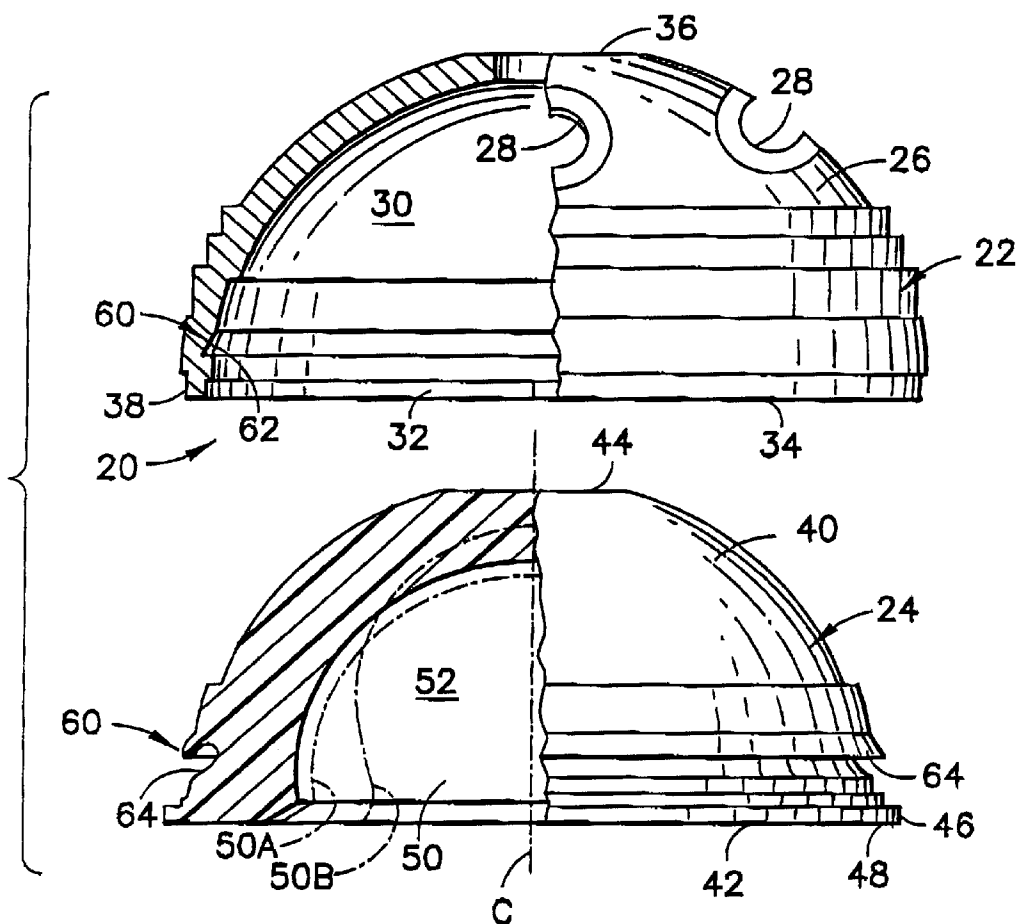


FIG. 1

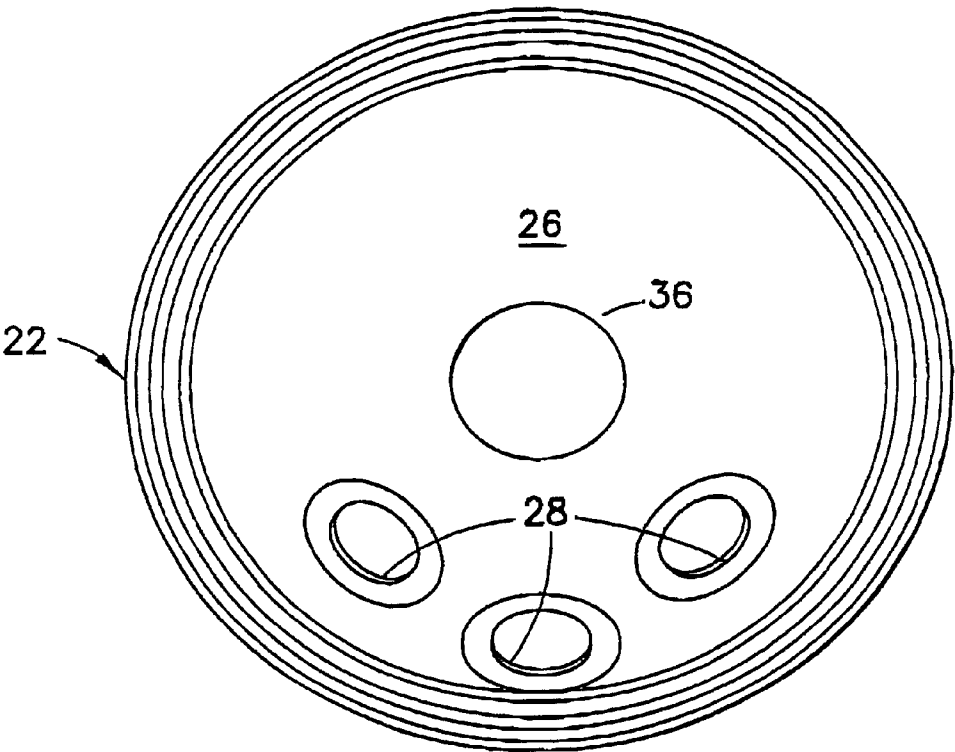


FIG. 2

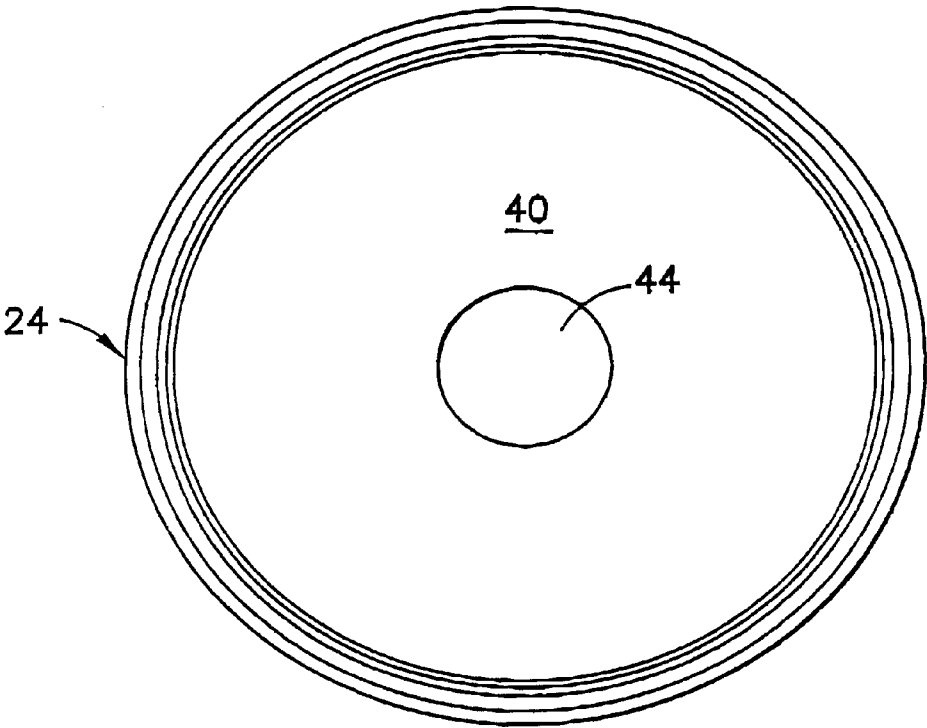


FIG. 3



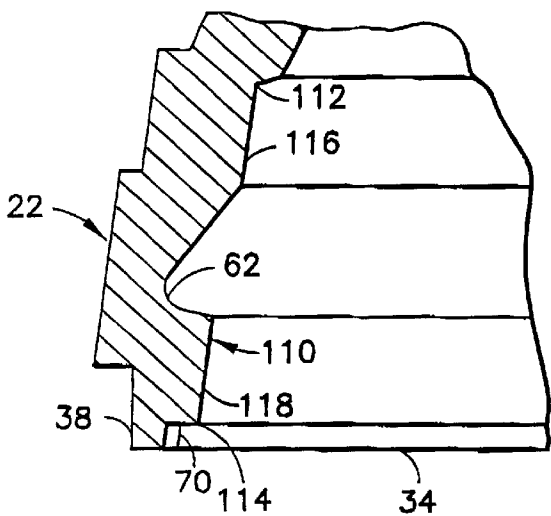


FIG. 4

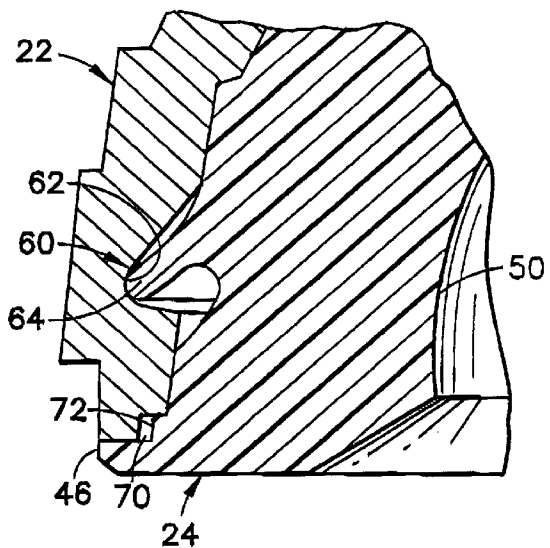


FIG. 6

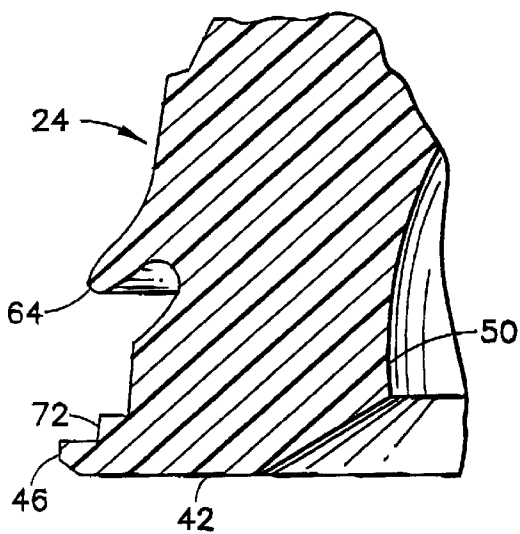


FIG. 5

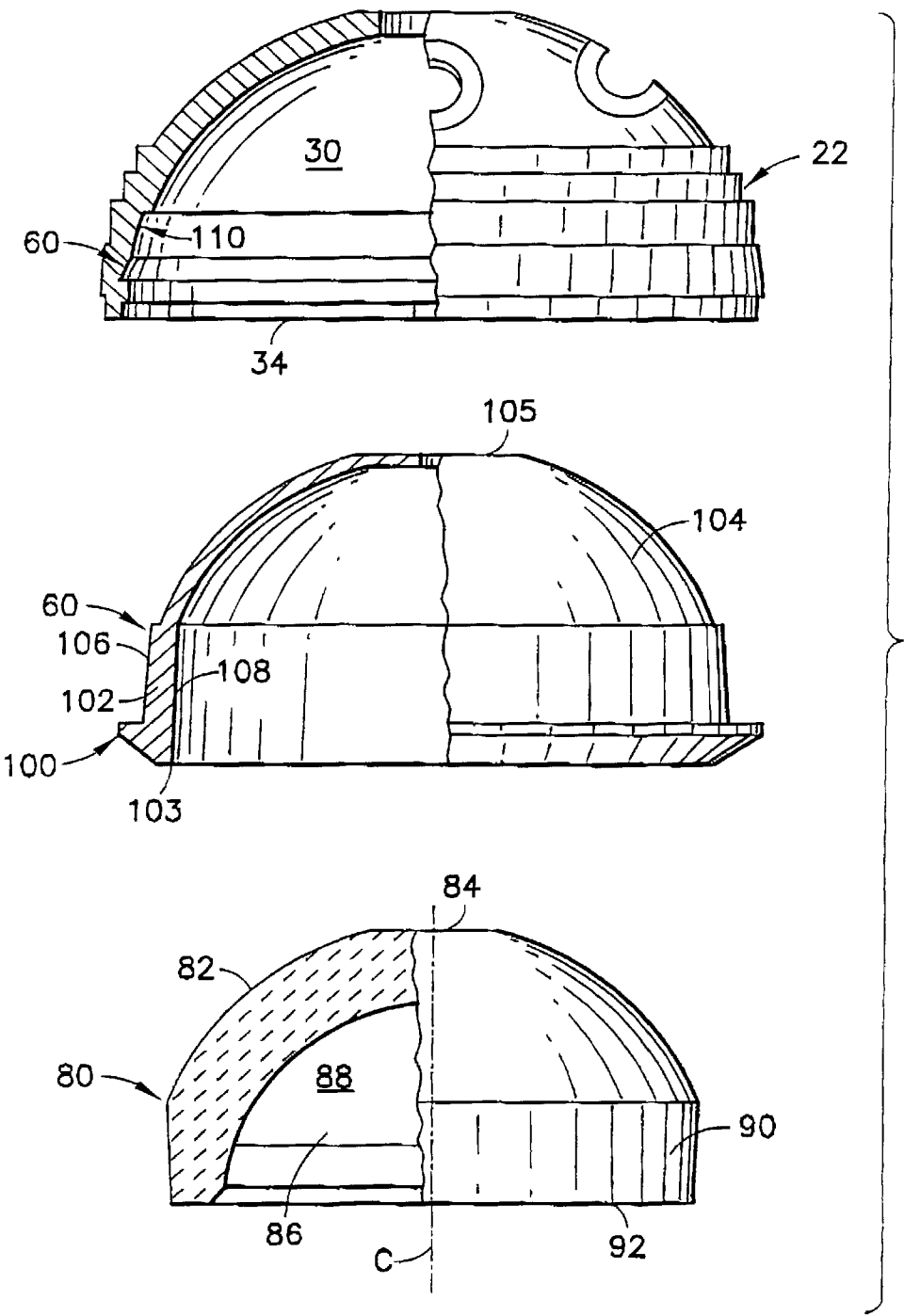


FIG. 7

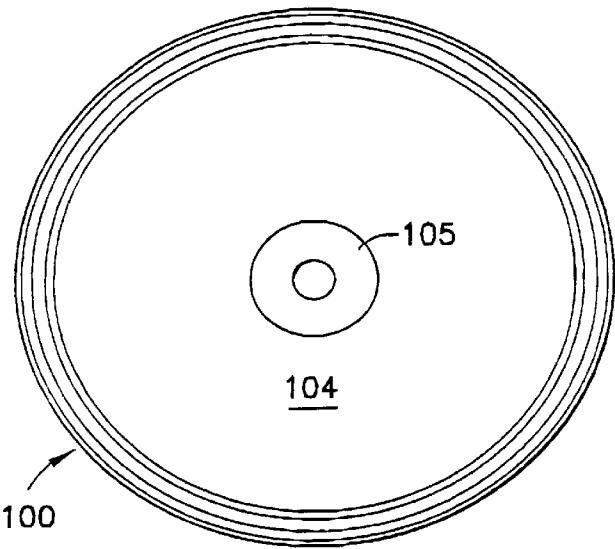


FIG. 8

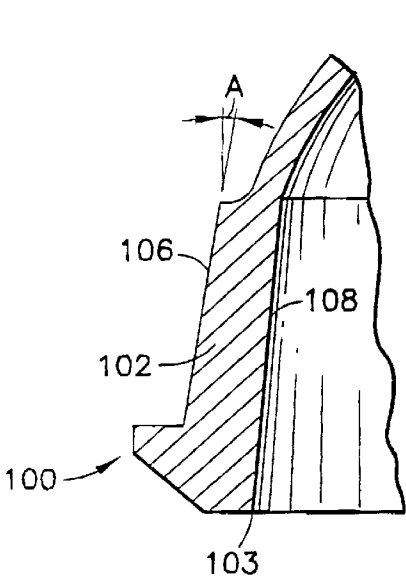


FIG. 9

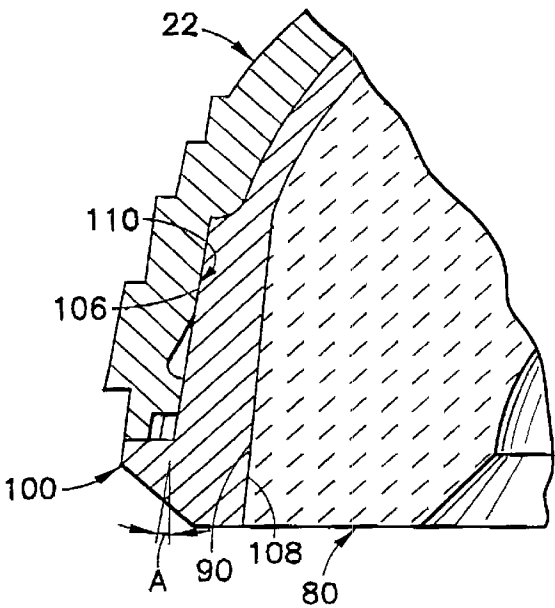


FIG. 10

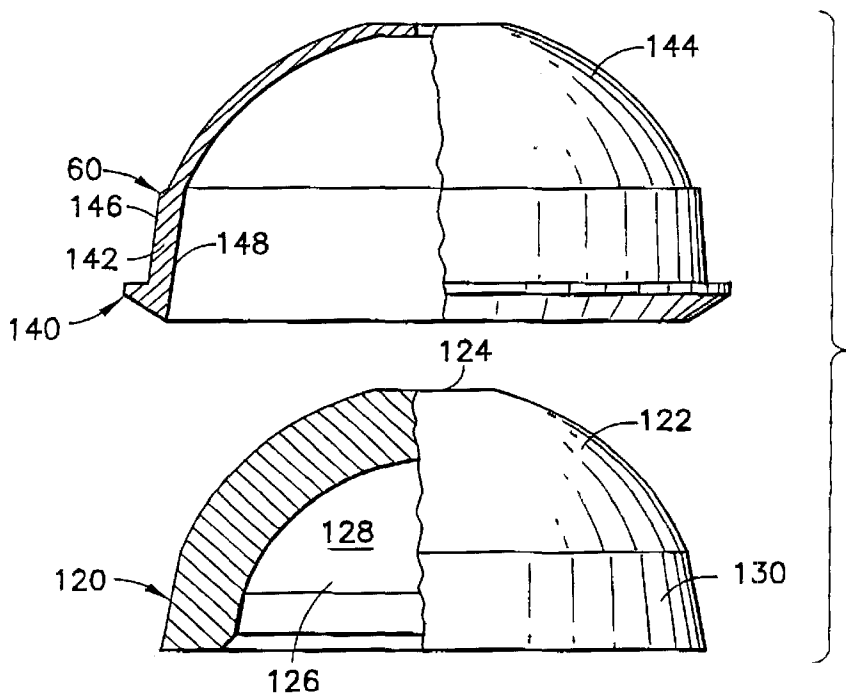


FIG. 11

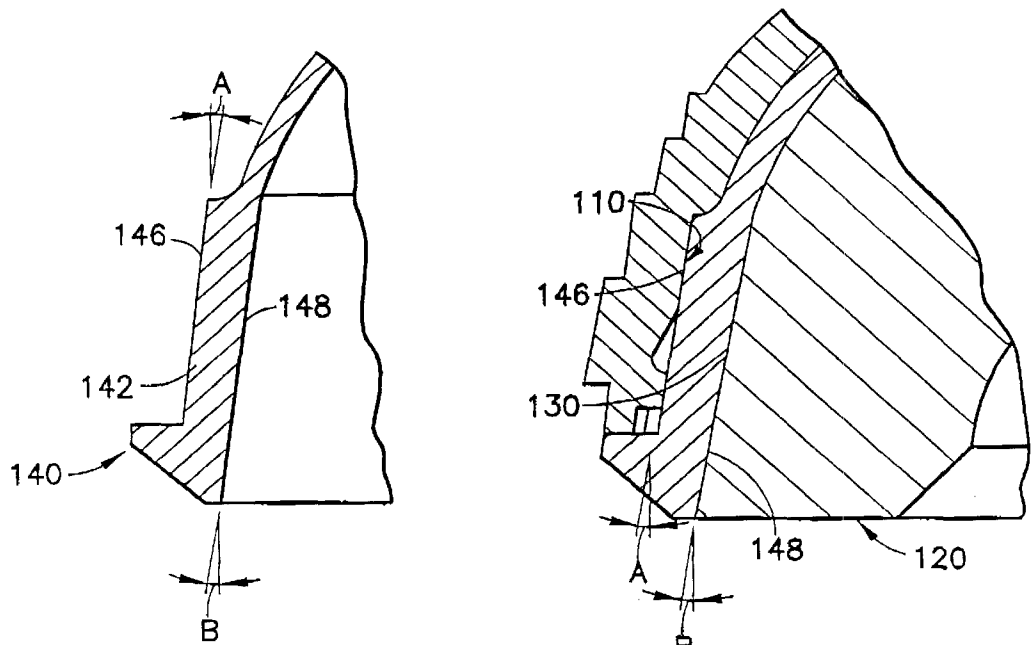


FIG. 12

FIG. 13

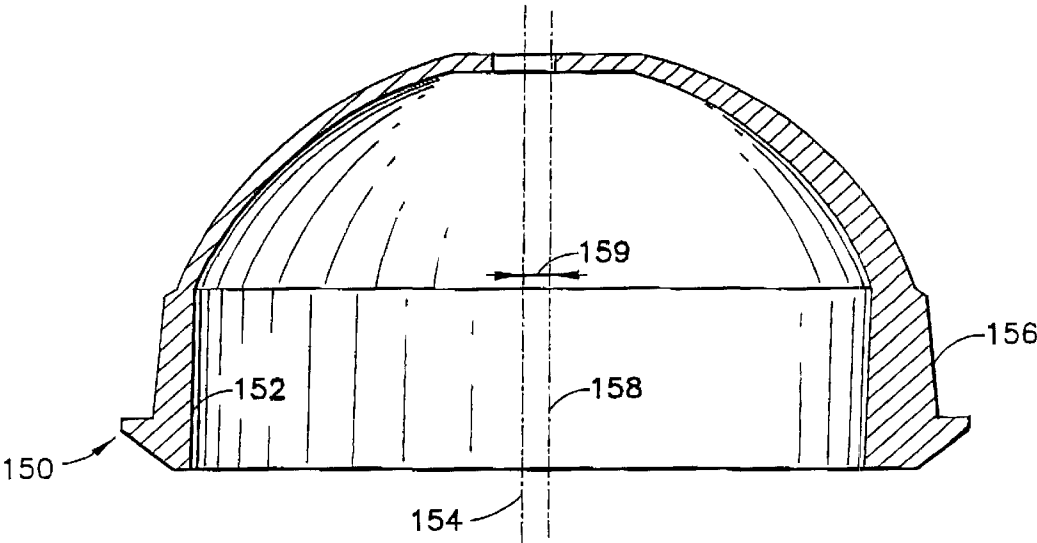


FIG.14

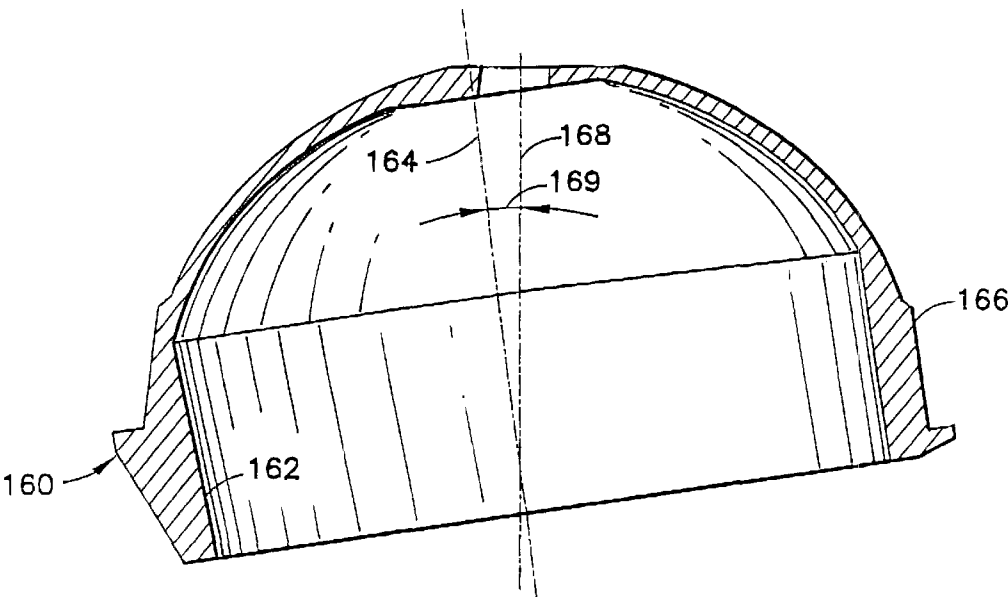


FIG.15

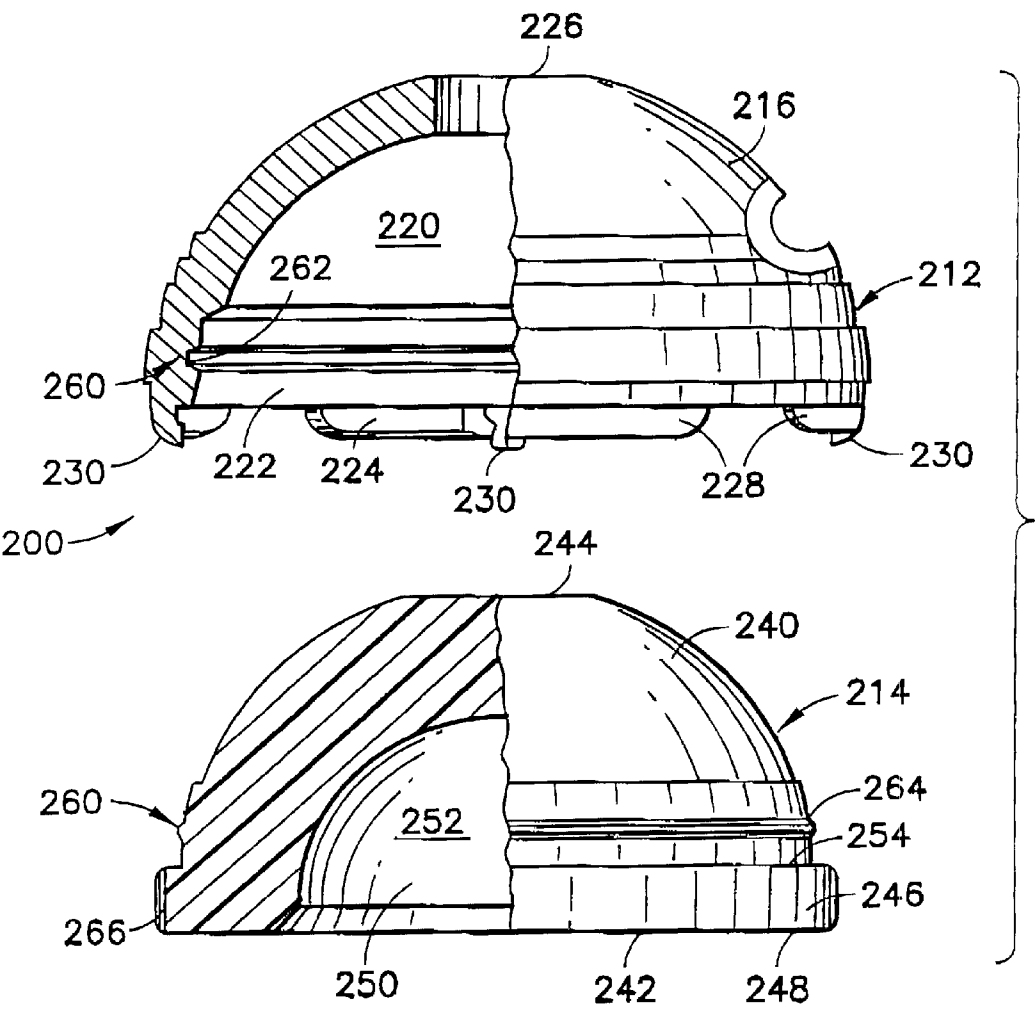


FIG.16

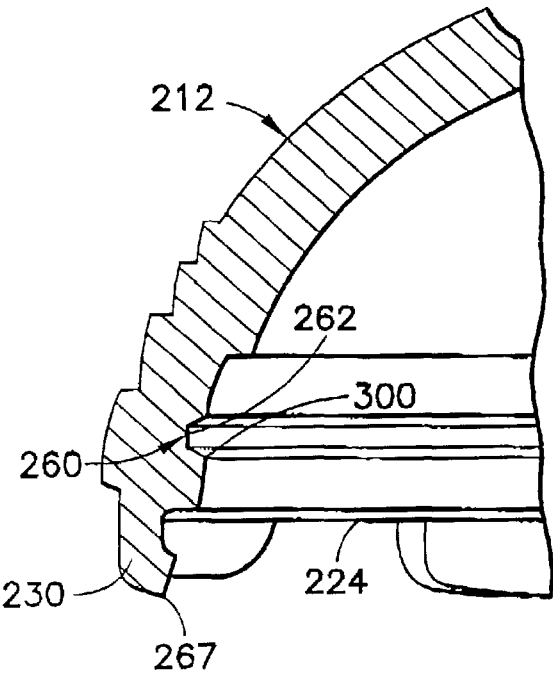


FIG. 17

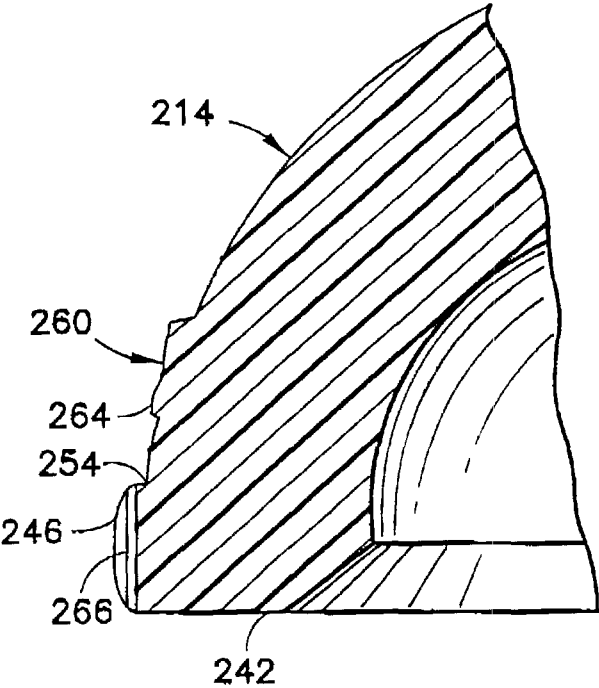


FIG. 18

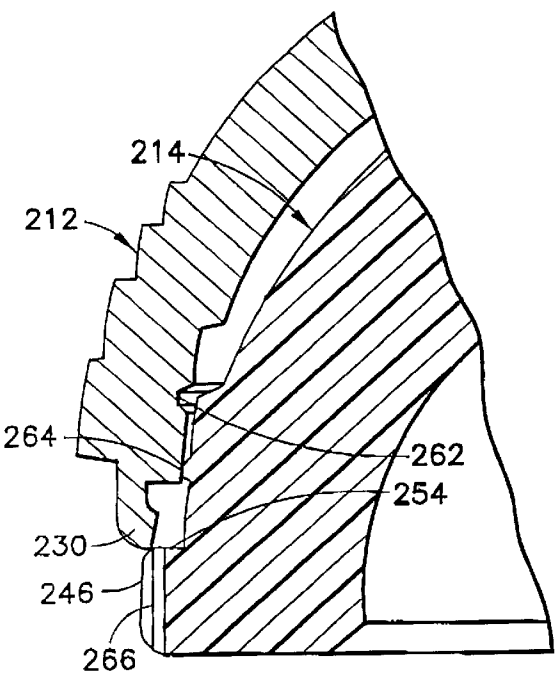


FIG. 19

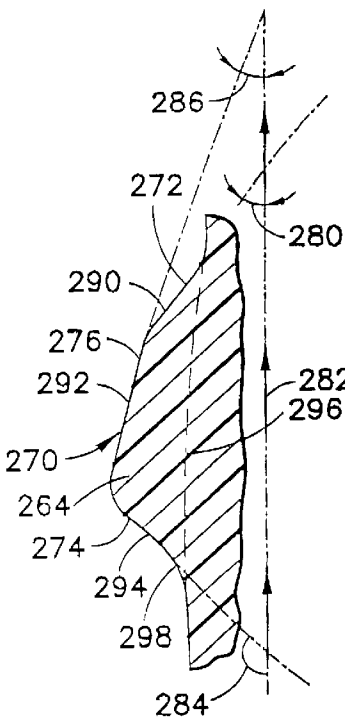


FIG. 21

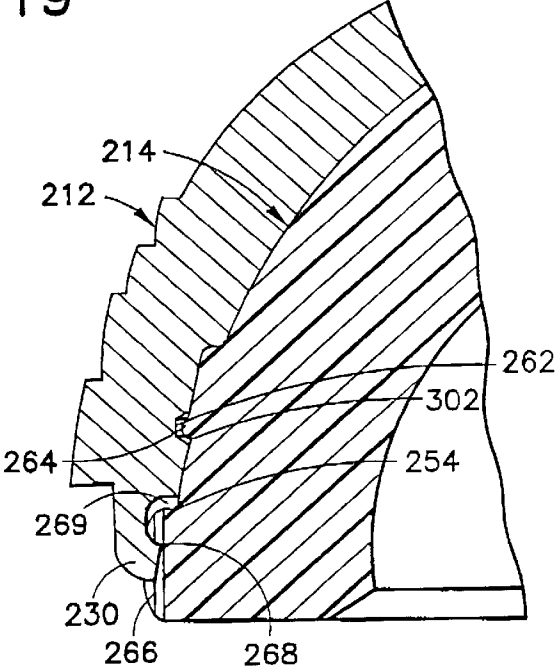


FIG. 20



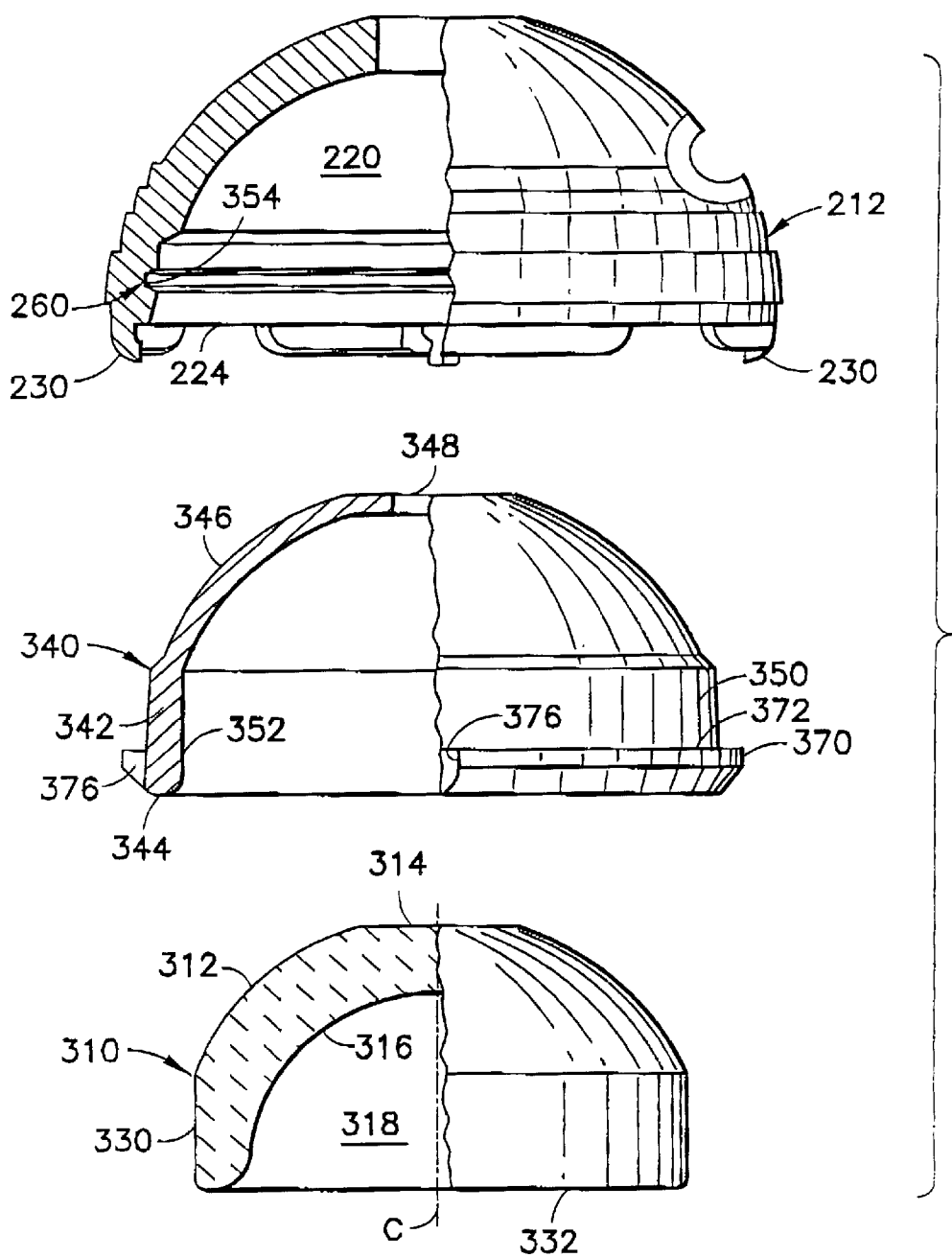


FIG.22

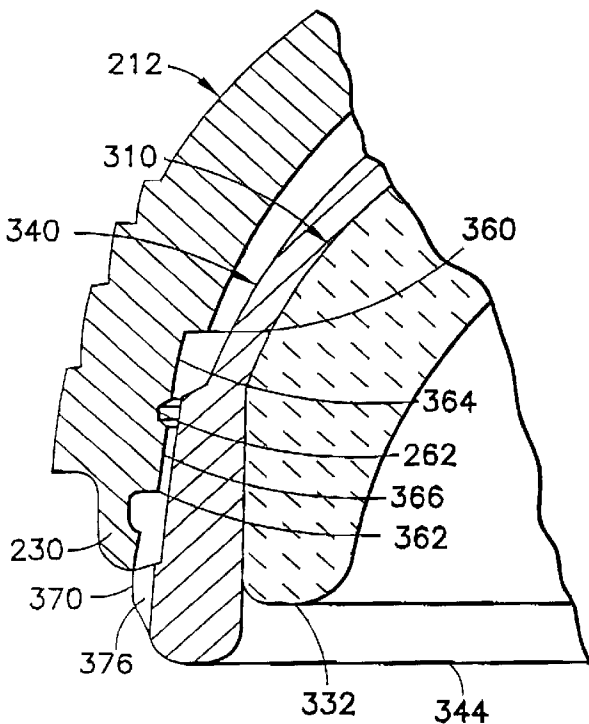


FIG.23

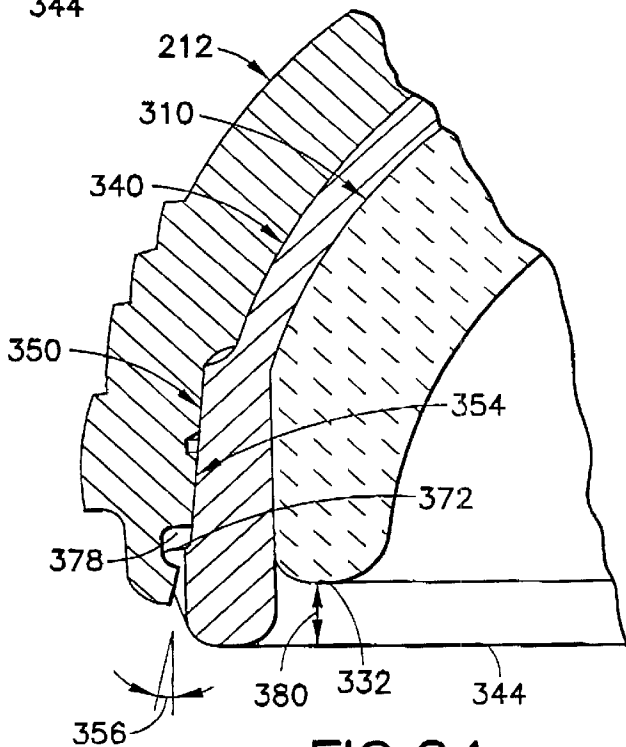


FIG.24

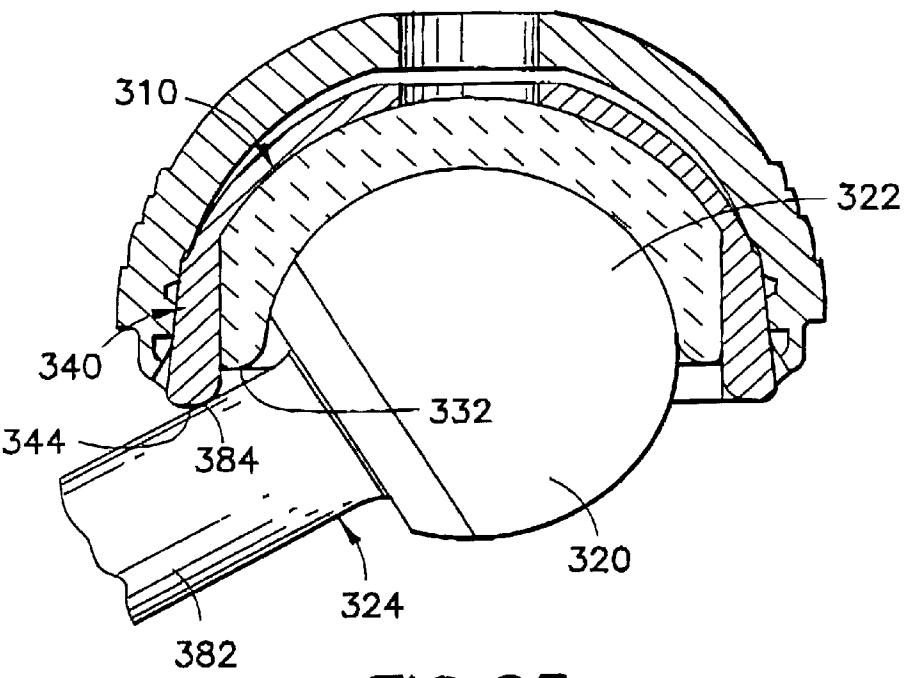


FIG.25

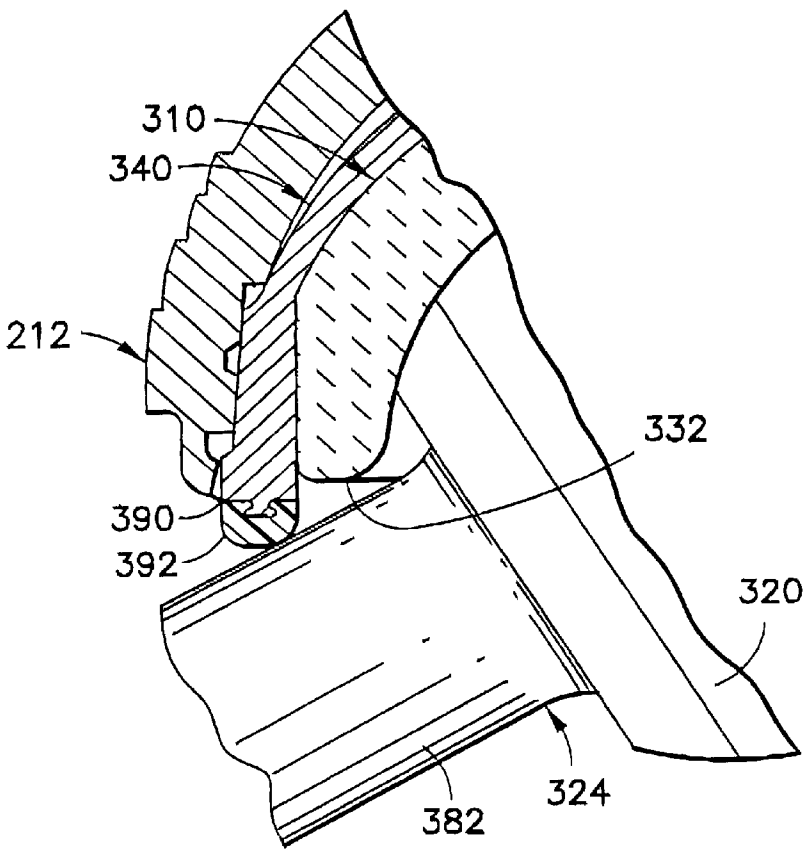


FIG.26

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# ACETABULAR CUP ASSEMBLY WITH SELECTED BEARING

This is a continuation-in-part of application Ser. No. 09/083,406, filed May 22, 1998, for ACETABULAR CUP ASSEMBLY WITH SELECTED BEARING.

The present invention relates generally to prosthetic implants and pertains, more specifically, to the implant of acetabular cup assemblies which secure a prosthetic bearing member in the acetabulum for the reception of a femoral head of a prosthetic hip joint.

The replacement of members of a natural hip joint with prosthetic implants has become widespread and is being accomplished with ever-increasing frequency. The variety of conditions encountered when effecting such implants has led to the use of various bearing materials placed at an optimum position and orientation, as determined by conditions encountered at the site of the implant. The choice of a particular material for the bearing, as well as the size, positioning and orientation of the bearing member, is determined by the surgeon performing the procedure. Usually such choices are made on the basis of a pre-operative assessment of the needs of a particular patient; however, at times the choices are not completed until the implant site actually is being prepared and conditions encountered at the site can be evaluated during the implant procedure itself. Accordingly, it would be advantageous to have available a greater range of interoperative choice, as well as pre-operative choice, so as to enable a surgeon to accommodate the needs of a particular patient as determined by either or both a pre-operative assessment and an evaluation of conditions encountered at a particular implant site, and to do so in a practical manner.

The present invention provides the surgeon with the ability to choose, either pre-operatively or interoperatively, an optimum material, position and orientation for a bearing member of an acetabular cup assembly to be implanted at a particular implant site, with increased ease and at lowered expense. As such, the present invention attains several objects and advantages, some of which are summarized as follows: Accommodates a wider choice of bearing materials in the bearing member of an acetabular cup assembly, while utilizing a common acetabular shell; enables the choice of size, position and orientation of the bearing surface of a bearing member selected for assembly with a particular acetabular shell; increases the range of bearing materials, as well as bearing size, positioning and orientation, and renders the choices available in a practical manner for either pre-operative or interoperative selection; allows a surgeon greater latitude in accommodating the needs of different patients while meeting the requirements imposed by various conditions encountered at a particular implant site, and enables appropriate choices to be made interoperatively, as well as pre-operatively; promotes greater accuracy in the replacement of a natural hip joint, with increased economy; provides a surgeon with the ability to make both pre-operative choices and interoperative choices from a wider range of options; enables the securement of a bearing member of selected material within a common acetabular shell, with increased ease and economy, and without complex, specialized instruments; facilitates the insertion and securement of a selected bearing member within an acetabular shell in appropriate alignment and orientation of the bearing member within the acetabular shell; provides an acetabular cup assembly having a bearing member of appropriate bearing material and accurate sizing, positioning and orientation, with economy of manufacture and use, and long-term reliability.

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The above objects and advantages, as well as further objects and advantages, are attained by the present invention which may be described briefly as an acetabular cup assembly for receiving a proximal end of a femoral component of a prosthetic hip implant, the femoral component including a head member and a neck member depending from the head member, the acetabular cup assembly having an external shell member with an internal cavity, and an internal bearing member for securement within the cavity to receive the head member of the femoral component for rotational movement within the bearing member, the internal bearing member being selected from a plurality of bearing members having different characteristics such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the acetabular cup assembly comprising: a metallic securing member for reception within the cavity of the acetabular shell, the securing member extending between and upper end and a lower end and including an external securing element and an internal receptor element; an external receptor element on the bearing member, the external receptor element and the internal receptor element being compatible with particular characteristics of the bearing member such that upon engagement of the external receptor element with the internal receptor element the internal bearing member is secured to the securing member with the lower end of the bearing member spaced upwardly a prescribed distance from the lower end of the securing member; and an internal securing element within the cavity of the shell member, the internal securing element being essentially complementary to the external securing element of the securing member such that upon selective engagement of the external securing element with the internal securing element the securing member is secured selectively within the shell member; the prescribed distance between the lower end of the bearing member and the lower end of the securing member being such that contact between the neck member of the femoral component and the lower end of the securing member precludes deleterious impingement of the femoral component upon the bearing member.

Further, the present invention provides a shell member for use in an acetabular cup assembly having an internal bearing member for securement within the shell member, the internal bearing member being selected from a plurality of bearing members having different characteristics such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the shell member comprising: an internal cavity; a first securing element within the cavity of the shell member, the first securing element being compatible with the securing characteristics of at least one of the plurality of internal bearing members; and a second securing element within the cavity of the shell member, the second securing element being compatible with the securing characteristics of at least another of the plurality of internal bearing members; the first and second securing elements being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective securement within the shell member to complete the acetabular cup assembly.

In addition, the present invention includes a kit of component parts for assembling an acetabular cup assembly having an internal bearing member secured within a shell member, the kit comprising: a plurality of bearing members

having different characteristics such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of a selected one of the internal bearing members; the shell member comprising: an internal cavity; a first securing element within the cavity of the shell member, the first securing element being compatible with the securing characteristics of at least one of the plurality of internal bearing members; and a second securing element within the cavity of the shell member, the second securing element being compatible with the securing characteristics of at least another of the plurality of internal bearing members; the first and second securing elements being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective securement within the shell member as the selected one bearing member to complete the acetabular cup assembly.

Still further, the present invention provides an improvement in a method for implanting an acetabular cup assembly having an external shell member with an internal cavity, and an internal bearing member for securement within the cavity, the internal bearing member being selected from a plurality of bearing members having different characteristics such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the improvement comprising the steps of: providing a first securing element within the cavity of the shell member, the first securing element being compatible with the securing characteristics of at least one of the plurality of internal bearing members; providing a second securing element within the cavity of the shell member, the second securing element being compatible with the securing characteristics of at least another of the plurality of internal bearing members; and selecting the one or the another of the internal bearing members and securing the selected internal bearing member within the shell member by engaging the selected internal bearing member with the corresponding first securing element or second securing element for completion of the acetabular cup assembly.

The invention will be understood more fully, while still further objects and advantages will become apparent, in the following detailed description of preferred embodiments of the invention illustrated in the accompanying drawing, in which:

FIG. 1 is an exploded elevational view, partially sectioned, of an acetabular cup assembly constructed in accordance with the present invention;

FIG. 2 is a top plan view of the shell component of the acetabular cup assembly;

FIG. 3 is a top plan view of the bearing insert component of the acetabular cup assembly;

FIG. 4 is an enlarged fragmentary view of a portion of the shell component as illustrated in FIG. 1;

FIG. 5 is an enlarged fragmentary view of a portion of the bearing insert component as illustrated in FIG. 1;

FIG. 6 is an enlarged fragmentary view of the portions shown in FIGS. 4 and 5, with the acetabular cup assembly assembled;

FIG. 7 is an exploded elevational view, partially sectioned, of the acetabular cup assembly shown utilizing alternate component parts;

FIG. 8 is a top plan view of a securing component of the acetabular cup assembly;

FIG. 9 is an enlarged fragmentary view of a portion of the securing component as illustrated in FIG. 7;

FIG. 10 is an enlarged fragmentary cross-sectional view of a portion of the acetabular cup assembly illustrated in FIG. 7, with the component parts assembled;

FIG. 11 is an exploded elevational view, partially sectioned, of an alternate securing component and bearing insert component for the acetabular cup assembly;

FIG. 12 is an enlarged fragmentary view of a portion of the securing component of FIG. 11;

FIG. 13 is an enlarged fragmentary view of portions of the acetabular cup assembly utilizing the alternate component parts illustrated in FIG. 11, with the component parts assembled;

FIG. 14 is an elevational cross-sectional view of an alternate securing component;

FIG. 15 is an elevational cross-sectional view of another alternate securing component;

FIG. 16 is an exploded elevational view, partially sectioned, of another acetabular cup assembly constructed in accordance with the present invention;

FIG. 17 is an enlarged fragmentary view of a portion of the shell component illustrated in FIG. 16;

FIG. 18 is an enlarged fragmentary view of a portion of the bearing insert component illustrated in FIG. 16;

FIG. 19 is an enlarged fragmentary view of the portions shown in FIGS. 17 and 18, as the bearing insert component is being inserted into the shell component;

FIG. 20 is an enlarged fragmentary view of the portions shown in FIGS. 17 and 18, with the acetabular cup assembly assembled;

FIG. 21 is an enlarged fragmentary view of a portion of FIG. 18;

FIG. 22 is an exploded elevational view, partially sectioned, showing another embodiment including an assembly in which a bearing component is to be assembled with a securing component;

FIG. 23 is an enlarged fragmentary view of the portion of the securing component and bearing component assembly as the assembly is being inserted into the acetabular shell;

FIG. 24 is an enlarged fragmentary view similar to FIG. 23, and showing the securing component and bearing component assembly assembled within the acetabular shell;

FIG. 25 is a longitudinal cross-sectional view of the assembled securing component, bearing component and acetabular shell, with a femoral head of a femoral component engaged with the securing component; and

FIG. 26 is an enlarged fragmentary longitudinal cross-sectional view of a modified construction.

Referring now to the drawing, and especially to FIGS. 1 through 3 thereof, an acetabular cup assembly constructed in accordance with the present invention is illustrated generally at 20. Acetabular cup assembly 20 includes a shell component in the form of metallic shell member 22 and a bearing insert which, in this instance, is in the form of a plastic bearing member 24. Shell member 22 includes an outer surface 26 having a profile configuration which enables the shell member 22 to be seated and fixed in place within an appropriately prepared acetabulum in a now well-known manner. A plurality of screw holes 28 are provided in the shell member 22 for receiving anchoring screws (not shown) when such supplemental securing means are desired. An inner cavity 30 extends upwardly into shell member 22, from a lower opening 32 at a lower end 34 toward an upper end 36. A rim 38 is located at the lower end 34.

Bearing member 24 has a generally domed exterior 40 which is essentially complementary to the cavity 30 of the shell member 22 and extends longitudinally from a base 42 to a top 44. A basal flange 46 extends circumferentially



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around the base 42 of the bearing member 24 and projects laterally outwardly to provide a transverse bearing face 48 at the base 42 of the bearing member 24. A bearing socket 50 extends upwardly into the bearing member 24 and provides a spherical bearing surface 52 for a complementary femoral head (not shown).

Acetabular cup assembly 20 is to be implanted in stages; that is, the shell member 22 and the bearing member 24 are to be assembled interoperatively, so as to enable appropriate sizing, placement and orientation of the bearing socket 50, based upon a pre-operative assessment or upon an evaluation of conditions encountered at the site of the implant. To that end, alternate bearing members 24 are made available, in a kit of component parts, which kit provides a plurality of bearing members, the alternate bearing members 24 providing corresponding bearing sockets 50 placed at different locations and orientations, relative to the seated and secured shell member 22, any one of which bearing sockets 50 then being capable of securement in place in the shell member 22, interoperatively, with the bearing surface 52 appropriately located and oriented for accommodating the needs of the patient.

A selected bearing member 24 is secured in place appropriately within the shell member 22 by means of a securing mechanism 60 provided adjacent the lower end 34 of the shell member 22 and adjacent the base 42 of the bearing member 24. Turning now to FIGS. 4 through 6, as well as to FIGS. 1 through 3, securing mechanism 60 is seen to include a securing element in the form of an annular recess 62 extending laterally outwardly into the shell member 22 adjacent the lower end 34. a complementary securing element in the form of an annular rib 64 extends laterally outwardly from the bearing member 24, adjacent the base 42 of the bearing member 24. A preferred material for the plastic bearing member 24 is an ultra-high molecular weight polyethylene commonly used in connection with such bearing members, the securing characteristics of which material include a resiliency sufficient to assure that upon inserting the bearing member 24 into the shell member 22, and seating the bearing member 24 in the shell member 22, as seen in FIG. 6, the annular rib 64 is seated within the annular recess 62 to secure the bearing member 24 within the shell member 22.

The position and orientation of the bearing socket 50 relative to the fixed shell member 22 are selected by providing the different locations and orientations of the bearing socket 50 within the bearing member 24, as set forth above. Thus, as seen in FIG. 1, the bearing socket 50 may be offset from the central axis C of the bearing member 24, as illustrated in phantom by an alternate offset bearing socket 50A, by varied amounts in different selectable bearing members 24, for the selection of an appropriate position for the bearing socket 50 at the implant site. Likewise, an appropriate orientation of bearing socket 50 is made available through the provision of alternate angled orientations, as illustrated in phantom by an alternately oriented bearing socket 50B in FIG. 1. Once seated in place, the selected bearing member 24 is secured within the shell member 22 by engagement of the complementary securing elements in the form of recess 62 and rib 64, common to the securing mechanism 60 provided for all of the alternate bearing members 24. In addition, once the selected bearing member 24 is seated appropriately within the shell member 22, rotation of the bearing member 24 about the axis C relative to the shell member 22 is precluded by engagement of protrusions 70 extending radially inwardly from the rim 38 of the shell member 22 with counterpart portions 72 of the bearing member 24, adjacent the flange 46 of the bearing member 24.

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Should the surgeon determine, either on the basis of a pre-operative assessment of a patient or during the course of the implant procedure, that based upon the needs of a particular patient, as determined by the pre-operative assessment or by an evaluation of conditions encountered at the particular implant site, a bearing material having characteristics other than those of the material of bearing member 24 would be more appropriate, acetabular cup assembly 20 provides the surgeon with the ability to choose a bearing member having a bearing material which exhibits characteristics more appropriate to the needs of that particular patient. Thus, as seen in FIGS. 7 through 10, an alternate bearing member 80, provided as another of the plurality of bearing members made available in the aforesaid kit, is constructed of a ceramic material and includes a generally domed exterior portion 82 which extends to a top 84. A bearing socket 86 extends upwardly into the bearing member 80 and provides a spherical bearing surface 88 for a complementary femoral head (not shown).

One of the most effective, convenient, mechanically simple and easily used securement mechanisms available for securing together mechanical components, where neither component is constructed of a resilient material such as the material of plastic bearing member 24, is mating tapered surfaces. The degree to which the tapered surfaces are tapered depends upon securing characteristics of the particular materials being secured together. However, the securing characteristics of ceramic bearing member 80 are such that securement of the bearing member 80 is best accomplished with a securement surface which is essentially cylindrical. Accordingly, bearing member 80 is provided with an external receptor element in the form of a generally cylindrical securement surface 90 which extends essentially parallel to the central axis C of the bearing member 80, between lower end 92 of the bearing member 80 and the domed exterior portion 82. In order to enable simplified interoperative securement of the bearing member 80 within shell member 22, subsequent to locating and seating shell member 22 within the acetabulum, securing mechanism 60 provides appropriate mating tapered surfaces. Thus, securing mechanism 60 includes a metallic securing member shown in the form of a sleeve 100 having an annular ring portion 102 adjacent a lower end 103 and a domed portion 104 extending between the ring portion 102 and an upper end 105. The domed portion 104 is essentially complementary to the counterpart portion of the inner cavity 30 of the shell member 22, and the ring portion 102 is provided with an external securing element in the form of an external seating surface 106 and an internal receptor element in the form of a generally cylindrical internal securement surface 108. The configuration of the internal securement surface 108 and the configuration of the external securement surface 90 are compatible with the particular characteristics of the material of the bearing member 80 so that upon engagement of the external securement surface 90 with the internal securement surface 108, as by an interference fit, the bearing member 80 is secured to the sleeve 100.

Securing mechanism 60 further includes an internal securing element in the form of internal seating surface 110 located on the shell member 22, within the cavity 30 adjacent the lower end 34 of the shell member 22. Internal seating surface 110 is generally complementary to external seating surface 106 for mating engagement of the seating surfaces 106 and 110, as seen in FIG. 10. The seating surfaces 106 and 110 are provided with a tapered configuration, as illustrated by angle A, the taper of the configuration being compatible with the securing character-

istics of the material of the sleeve 100 and the shell member 22 such that the sleeve 100 is secured within the shell member 22 by virtue of the locking of the tapered seating surfaces 106 and 110 in response to engagement of the seating surfaces 106 and 110. In the preferred embodiment, the shell member 22 and the sleeve 100 are constructed of commercially pure titanium and the angle A is about 6°. Seating surface 110 includes an upper end 112 and a lower end 114 and is divided by the recess 62 into an upper segment 116 and a lower segment 118 (see FIG. 4). By placing the recess 62 essentially midway between the upper end 112 and the lower end 114, engagement of the seating surfaces 106 and 110, and the locking of the seating surfaces 106 and 110 in response to such engagement, is facilitated by virtue of the locking being accomplished along segments 116 and 118 having generally the same, and therefore maximized, axial length. In this manner, the effectiveness of the seating surface 110 in assuring appropriate alignment between the sleeve 100 and the shell member 22 as the sleeve 100 is inserted into the shell member 22 and in subsequently attaining the desired locking engagement with seating surface 106 is not compromised by the presence of the recess 62.

Referring now to FIGS. 11 through 13, should the surgeon desire to employ another material as a bearing material in the acetabular cup assembly 20, another alternative bearing member constructed of that material is available in the aforesaid kit of component parts for securement within the shell member 22. Thus, alternate bearing member 120 is constructed of another metal, such as, for example, a cobalt-chrome alloy. Bearing member 120 includes a generally domed exterior portion 122 which extends to a top 124. A bearing socket 126 extends upwardly into the bearing member 120 and provides a spherical bearing surface 128 for a complementary femoral head (not shown). Bearing member 120 is provided with an external receptor element in the form of an external securing surface 130. Here again, securing mechanism 60 includes a metallic securing member shown in the form of a sleeve 140 having an annular ring portion 142 and a domed portion 144. The domed portion 144 is essentially complementary to the counterpart portion of the inner cavity 30 of the shell member 22, and the ring portion 142 is provided with an external securing element in the form of an external seating surface 146 and an internal receptor element in the form of an internal securement surface 148.

The configuration of the internal securement surface 148 and the configuration of the external securement surface 130 are compatible with the particular securing characteristics of the material of the bearing member 120 so that upon engagement of the external securement surface 130 with the internal securement surface 148, the bearing member 120 is secured to the sleeve 140 in response to such engagement and seating of the sleeve 140 on the bearing member 120. To that end, the securement surfaces 130 and 148 are tapered at an angle B which effects a secure lock between the bearing member 120 and the sleeve 140. The sleeve 140, in turn, is secured within the shell member 22 by the lock effected between the seating surfaces 146 and 110. In the preferred embodiment, sleeve 140 and shell member 22 both are constructed of commercially pure titanium and the seating surfaces 146 and 110 are tapered at angle A, compatible with the securing characteristics of the material of sleeve 140 and shell member 22, as described above in connection with sleeve 100. In this manner, the shell member 22 is able to receive any selected one of a plurality of bearing members constructed of different materials, such as bearing members

24, 80 and 120, furnished in the aforesaid kit, with securement of the selected bearing member being effected either pre-operatively or interoperatively with ease, accuracy and minimal effort on the part of the surgeon, and without the necessity for complex special instruments.

Turning now to FIG. 14, where it is desired to select a particular position of the bearing surface of a bearing member relative to a shell member within which the bearing member is to be secured, utilizing a metallic securing member in the form of a sleeve constructed in accordance with the present invention, alternate sleeves are provided in which the relative location of the internal receptor element and the external securing element of the sleeve differ from sleeve to sleeve. Thus, in an alternate sleeve 150, the internal receptor element includes an internal securement surface 152 having a central axis 154 which extends in a longitudinal direction, the external securing element includes an external seating surface 156 having a central axis 158 which extends in a longitudinal direction, and the central axis 154 is offset laterally from the central axis 158, as seen at 159. A desired position of the bearing surface of a bearing member is attained by selecting a sleeve 150 having a particular offset 159.

A desired orientation of the bearing surface of a bearing member is attained by selecting a sleeve which provides that orientation. As seen in FIG. 15, an alternate sleeve 160 includes an internal securement surface 162 having a central axis 164 which extends in a longitudinal direction, the external securing element includes an external seating surface 166 having a central axis 168 which extends in a longitudinal direction, and the central axis 164 makes an acute angle 169 with the central axis 168 such that the selection of the magnitude of angle 169 results in a concomitant selection of the relative orientation of the surfaces 162 and 166. A desired orientation of the bearing surface of a bearing member is attained by selecting a sleeve 160 having a particular angle 169.

It will be understood that the selected positioning and the selected orientation described in connection with sleeves 150 and 160 are illustrative examples only. Various combinations of positioning and orientation, as well as other positions and orientations, are available by modifying the configuration of the metallic securing member to accommodate the desired positioning and orientation of the bearing surface of a particular bearing member.

Referring now to FIGS. 16 through 18, another embodiment of the invention is illustrated in the form of acetabular cup assembly 200. Acetabular cup assembly 200 includes a shell component in the form of metallic shell member 212 and a bearing insert which, in this instance, is in the form of a plastic bearing member 214. Shell member 212 has an outer surface 216 having a profile configuration which enables the shell member 212 to be seated and fixed in place within an appropriately prepared acetabulum in a now well-known manner. An inner cavity 220 extends upwardly into shell member 212, from a lower opening 222 at a lower end 224 toward an upper end 226. Rim segments 228 are located at the lower end 224, and fingers 230 depend from the rim segments 228, the preferred number of fingers 230 being four, spaced apart at ninety degrees from one another, for purposes to be set forth in detail below.

Bearing member 214 has a generally domed exterior 240 which is essentially complementary to the cavity 220 of the shell member 212 and extends longitudinally from a base 242 to a top 244. A basal flange 246 extends circumferentially around the base 242 of the bearing member 214 and projects laterally outwardly to provide a transverse bearing

face 248 at the base 242 of the bearing member 214. A bearing socket 250 extends upwardly into the bearing member 214 and provides a spherical bearing surface 252 for a complementary femoral head (not shown). Basal flange 246 includes an upper lateral surface 254.

Acetabular cup assembly 200 is to be implanted in stages; that is, the shell member 212 and the bearing member 214 are to be assembled interoperatively, so as to enable appropriate sizing, placement and orientation of the bearing socket 250, based upon a pre-operative assessment or upon an evaluation of conditions encountered at the site of the implant. To that end, alternate bearing members 214 are made available, the alternate bearing members 214 providing corresponding bearing sockets 250 placed at different locations and orientations, relative to the seated and secured shell member 212, any one of which bearing sockets 250 then being capable of securement in place in the shell member 212, interoperatively, with the bearing surface 252 appropriately located and oriented for accommodating the needs of the patient. Thus, a kit of component parts which include a plurality of bearing members is made available for the selection of an appropriate bearing member 214.

A selected bearing member 214 is secured in place appropriately within the shell member 212 by means of a securing mechanism 260 provided adjacent the lower end 224 of the shell member 212 and adjacent the base 242 of the bearing member 214. Turning now to FIGS. 19 and 20, as well as to FIGS. 16 through 18, securing mechanism 260 is seen to include a securing element in the form of an annular recess 262 extending laterally outwardly into the shell member 212 adjacent the lower end 234. a complementary securing element in the form of an annular rib 264 extends laterally outwardly from the bearing member 214, adjacent the base 242 of the bearing member 214. A preferred material for the plastic bearing member 214 is an ultra-high molecular weight polyethylene commonly used in connection with such bearing members, the securing characteristics of which material include a resiliency sufficient to assure that upon inserting the bearing member 214 into the shell member 212, and seating the bearing member 214 in the shell member 212, as seen in FIG. 20, the annular rib 264 is seated within the annular recess 262 to secure the bearing member 214 within the shell member 212.

In order to assure the attainment of the desired orientation of the bearing member 214 within the shell member 212, prior to securement by virtue of the rib 264 entering the annular recess 262, depending fingers 230 will preclude complete insertion of the bearing member 214 into the shell member 212 by abutting the upper lateral surface 254 of flange 246 when the bearing member 214 is in the longitudinal position shown in FIG. 19 and the bearing member 214 is not in the desired orientation. Upon rotation of the bearing member 214 into the desired orientation, notches 266 in the flange 246 are registered with corresponding fingers 230. The notches 266 are configured for allowing the fingers 230 to enter the notches 266, thereby permitting full engagement of the bearing member 214 within the shell member 212 upon proper orientation of the bearing member 214 relative to the shell member 212. Upon such full engagement of the bearing member 214 within the shell member 212, sharp edges 267 on the fingers 230 are embedded within the material of bearing member 214, as shown at 268, for precluding micromotions between the bearing member 214 and the shell member 212. A small clearance at 269, between portions of the upper lateral surface 254 and corresponding confronting portions of the lower end 224 of the shell member 212, provide purchases for any desired subsequent removal of the bearing member 214 from the shell member 212.

Turning now to FIG. 21, rib 264 is provided with a cross-sectional profile contour configuration 270 for facilitating engagement of the rib 264 within the recess 262, while effecting an enhanced connection between the bearing member 214 and the shell member 212. Profile contour configuration 270 includes an upper section 272 confronting the top 244 at the upper end of the bearing member 214, a lower section 274 confronting the base 242 at the lower end of the bearing member 214, and an intermediate section 276 extending between the upper and lower sections 272 and 274. The upper section 272 makes an acute angle 280 with axial direction 282, and the lower section 274 makes an obtuse angle 284 with the axial direction 282. The intermediate section 276 makes an acute angle 286 with the axial direction 282, the acute angle 286 being smaller than the acute angle 260 so as to establish tapered surfaces 290 and 292 along the upper and intermediate sections 272 and 276, respectively, while the obtuse angle 284 establishes a locking surface 294 along the lower section 274. The tapered surfaces 290 and 292 facilitate the engagement of rib 264 within recess 262 during assembly and the locking surface 294 retains the rib 264 within the recess 262 once assembly is complete. The overall profile contour configuration 270 maximizes the area 296 at the root 298 of the rib 264 so that the resistance to shear of the material of the bearing member 214 at the root 298 of the rib 264 is maximized. At the same time, a sharp edge 300 which extends along the recess 262, engages the rib 264 at the locking surface 294, as illustrated at 302, to preclude micromotions between the bearing member 214 and the shell member 212.

Again, should the surgeon determine, either on the basis of a pre-operative assessment of a patient or during the course of the implant procedure, that based upon the needs of a particular patient, as determined by the pre-operative assessment or by an evaluation of conditions encountered at the particular implant site, a bearing material having characteristics other than those of the material of bearing member 214 would be more appropriate, acetabular cup assembly 200 provides the surgeon with the ability to choose, from a kit of component parts providing a plurality of bearing members, a bearing member having a bearing material which exhibits characteristics more appropriate to the needs of that particular patient. Thus, as seen in FIGS. 22 through 25, an alternate bearing member 310 is constructed of a ceramic material and includes a generally domed exterior portion 312 which extends to a top 314. A bearing socket 316 extends upwardly into the bearing member 310 and provides a spherical bearing surface 318 for a complementary femoral head 320 of the proximal end 322 of a femoral component 324.

As in the embodiment described above in connection with FIGS. 7 through 10, bearing member 310 is provided with an external receptor element in the form of a generally cylindrical securement surface 330 which extends essentially parallel to central axis C of the bearing member 310, between lower end 332 of the bearing member 310 and the domed exterior portion 312. In order to enable simplified interoperative securement of the bearing member 310 within shell member 212, subsequent to locating and seating shell member 212 within the acetabulum, securing mechanism 260 provides appropriate mating tapered surfaces. Thus, securing mechanism 260 includes a metallic securing member shown in the form of a sleeve 340 having an annular ring portion 342 adjacent a lower end 344 and a domed portion 346 extending between the ring portion 342 and an upper end 348. The domed portion 346 is to be received within the counterpart portion of the inner cavity 220 of the shell



member 212, and the ring portion 342 is provided with an external securing element in the form of an external seating surface 350 and an internal receptor element in the form of a generally cylindrical internal securement surface 352. The configuration of the internal securement surface 352 and the configuration of the external securement surface 330 are compatible with the particular characteristics of the material of the bearing member 310 so that upon engagement of the external securement surface 330 with the internal securement surface 352, as by an interference fit, the bearing member 310 is secured to the sleeve 340.

Securing mechanism 260 further includes an internal securing element in the form of internal seating surface 354 located on the shell member 212, within the cavity 220 adjacent the lower end 224 of the shell member 212. Internal seating surface 354 is generally complementary to external seating surface 350 for mating engagement of the seating surfaces 350 and 354, as seen in FIG. 24. The seating surfaces 350 and 354 are provided with a tapered configuration, as illustrated by angle 356, the taper of the configuration being compatible with the securing characteristics of the material of the sleeve 340 and the shell member 212 such that the sleeve 340 is secured within the shell member 212 by virtue of the locking of the tapered seating surfaces 350 and 354 in response to engagement of the seating surfaces 350 and 354. In the preferred embodiment, the shell member 212 and the sleeve 340 are constructed of commercially pure titanium and the angle 356 is about 60°. Seating surface 354 includes an upper end 360 and a lower end 362 and is divided by the recess 262 into an upper segment 364 and a lower segment 366. By placing the recess 262 essentially midway between the upper end 360 and the lower end 362, engagement of the seating surfaces 350 and 354, and the locking of the seating surfaces 350 and 354 in response to such engagement is facilitated, by virtue of the locking being accomplished along segments 364 and 366 having generally the same, and therefore maximized, axial length. In this manner, the effectiveness of the seating surface 354 in assuring appropriate alignment between the sleeve 340 and the shell 212 as the sleeve 340 is inserted into the shell 212 and in subsequently attaining the desired locking engagement with seating surface 350 is not compromised by the presence of the recess 262.

A flange 370 extends laterally outwardly from the lower end 344 of the sleeve 340. In order to assure the attainment of the desired orientation of the sleeve 340, and the bearing member 310, within the shell member 212, prior to securement by virtue of the full seating of the sleeve 340 and bearing member 310, depending fingers 230 will preclude complete insertion of the sleeve 340 into the shell member 212 by abutting upper lateral surface 372 of flange 370 when the sleeve 340 is in the longitudinal position shown in FIG. 23 and the sleeve 340 is not in the desired orientation. Upon rotation of the sleeve 340 into the desired orientation, notches 376 in the flange 370 are registered with corresponding fingers 230. The notches 376 are configured for allowing the fingers 230 to enter the notches 376, thereby permitting full engagement of the sleeve 340, and bearing member 310, within the shell member 212 upon proper orientation and axial alignment of the sleeve 340 relative to the shell member 212. A small clearance at 378, between portions of the upper lateral surface 372 and corresponding confronting portions of the lower end 224 of the shell member 212, provide purchases for any desired subsequent removal of the bearing member 310 from the shell member 212.

As best seen in FIG. 25, as well as in FIGS. 23 and 24, the lower end 332 of the bearing member 310 is spaced

upwardly from the lower end 344 of the sleeve 340 a prescribed distance 380. With the femoral head 320 of the femoral component 324 engaged in the bearing surface 318 of the bearing member 310, rotational movement of the proximal end 322 of the femoral component 324 is limited by engagement of neck 382 of the femoral component 324 with the lower end 344 of the sleeve 340, as illustrated at 384. In this manner, impingement of the proximal end 322 of the femoral component 324 upon the bearing member 310 is precluded, thus eliminating a potential source of damage to the bearing member 310 when the acetabular cup assembly 200 is in service.

In the modification illustrated in FIG. 26, the lower end of the sleeve 340 is modified, as shown at 390, to receive a ring-like cushion 392 affixed to the lower end 390, the cushion 392 being constructed of a resilient synthetic polymeric material, the cushion 392 thus being interposed between the lower end of the sleeve 340 and the proximal end 322 of the femoral component 324 so as essentially to absorb shock connected with engagement of the proximal end 322 of the femoral component 324 with the sleeve 340.

It will be seen that acetabular cup assemblies 20 and 200 provide a surgeon with a wide range of choices for a pre-operative or an interoperative selection of characteristics of the bearing member of the acetabular cup assembly, with simplicity and lowered cost. Such characteristics include material, size, positioning and orientation. As such, the present invention attains the several objects and advantages summarized above, namely: Accommodates a wide choice of bearing materials in the bearing member of an acetabular cup assembly, while utilizing a common acetabular shell; enables the choice of size, position and orientation of the bearing surface of a bearing member selected for assembly with a particular acetabular shell; increases the range of bearing materials, as well as bearing size, positioning and orientation, and renders the choices available in a practical manner for either pre-operative or interoperative selection; allows a surgeon greater latitude in accommodating the needs of different patients while meeting the requirements imposed by various conditions encountered at a particular implant site, and enables appropriate choices to be made interoperatively, as well as pre-operatively; promotes greater accuracy in the replacement of a natural hip joint, with increased economy; provides a surgeon with the ability to make both pre-operative choices and interoperative choices from a wider range of options; enables the securement of a bearing member of selected material within a common acetabular shell, with increased ease and economy, and without complex, specialized instruments; provides an acetabular cup assembly having a bearing member of appropriate bearing material and accurate sizing, positioning and orientation, with economy of manufacture and use, and long-term reliability.

It is to be understood that the above detailed description of preferred embodiments of the invention is provided by way of example only. Various details of design, construction and procedure may be modified without departing from the true spirit and scope of the invention, as set forth in the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An acetabular cup assembly for receiving a proximal end of a femoral component of a prosthetic hip implant, the femoral component including a head member and a neck member depending from the head member in a distal direction, the acetabular cup assembly having an external shell member with an internal cavity, and an internal bearing

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member for securement within the cavity to receive the head member of the femoral component for rotational movement within the bearing member, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the acetabular cup assembly comprising:

a metallic securing member for reception within the cavity of the shell member, the securing member extending between an upper end and a lower end and including an external securing element and an internal receptor element;

an external receptor element on the bearing member, the external receptor element and the internal receptor element having interengagable structures compatible with the securement characteristics of the selected bearing member such that upon engagement of the external receptor element with the internal receptor element the internal bearing member is secured to the securing member with the lower end of the bearing member spaced upwardly a prescribed distance from the lower end of the securing member; and

an internal securing element within the cavity of the shell member, the internal securing element being essentially complementary to the external securing element of the securing member such that upon selective engagement of the external securing element with the internal securing element the securing member is secured selectively within the shell member;

the prescribed distance between the lower end of the bearing member and the lower end of the securing member being such that contact between the neck member of the femoral component and the lower end of the securing member precludes deleterious impingement of any portion of the femoral component distal of the head member upon the bearing member.

2. The invention of claim 1 wherein the internal securing element of the shell member and the external securing element of the securing member include complementary tapered securing surfaces for interlocking in response to seating engagement of the complementary securing surfaces.

3. The invention of claim 2 wherein the internal receptor element of the securing member and the external receptor element of the bearing member include complementary securing surfaces for interlocking upon seating engagement of the complementary securing surfaces.

4. The invention of claim 3 wherein the complementary securing surfaces of the external receptor element include complementary tapered surfaces for interlocking in response to seating engagement of the complementary tapered surfaces.

5. The invention of claim 4 wherein the shell member includes a lower end and an upper end, the cavity extends from the lower end toward the upper end of the shell member, and the internal securing element is located adjacent the lower end of the shell member.

6. The invention of claim 5 wherein the external securing element is located adjacent the lower end of the metallic securing member.

7. The invention of claim 6 wherein the metallic securing member includes a ring portion adjacent the lower end and a domed portion extending between the ring portion and the upper end of the metallic securing member.

8. The invention of claim 7 wherein the shell member includes at least one depending finger extending down-

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wardly from the lower end of the shell member, and the metallic securing member includes a flange extending laterally outwardly from the lower end of the securing member for engaging the depending finger to preclude the seating engagement of the complementary tapered securing surfaces of the shell member and the securing member, and at least one notch in the flange, the notch being configured for accepting entrance of the finger into the notch upon alignment of the notch with the finger, such alignment of the notch with the finger being accomplished upon a desired orientation and alignment of the securing member, and the bearing member therein, relative to the shell member, for enabling seating engagement of the complementary tapered surfaces with the bearing member in the desired orientation and alignment.

9. The invention of claim 1 wherein the shell member includes a lower end and an upper end, the cavity extends from the lower end toward the upper end of the shell member, the internal receptor element includes a central axis extending longitudinally between the lower end and the upper end of the shell member, the external securing element includes a central axis extending longitudinally between the lower end and the upper end of the shell member, and the central axis of the internal receptor element is offset laterally from the central axis of the external securing element.

10. The invention of claim 9 wherein the internal securing element of the shell member and the external securing element of the securing member include complementary tapered securing surfaces for interlocking in response to seating engagement of the complementary securing surfaces.

11. The invention of claim 10 wherein the internal receptor element of the securing member and the external receptor element of the bearing member include complementary securing surfaces for interlocking upon seating engagement of the complementary securing surfaces.

12. The invention of claim 11 wherein the complementary securing surfaces of the external receptor element include complementary tapered surfaces for interlocking in response to seating engagement of the complementary tapered surfaces.

13. The invention of claim 12 wherein the shell member includes at least one depending finger extending downwardly from the lower end of the shell member, and the metallic securing member includes a flange extending laterally outwardly from the lower end of the securing member for engaging the depending finger to preclude the seating engagement of the complementary tapered securing surfaces of the shell member and the securing member, and at least one notch in the flange, the notch being configured for accepting entrance of the finger into the notch upon alignment of the notch with the finger, such alignment of the notch with the finger being accomplished upon a desired orientation and alignment of the securing member, and the bearing member therein, relative to the shell member, for enabling seating engagement of the complementary tapered surfaces with the bearing member in the desired orientation and alignment.

14. The invention of claim 1 wherein the shell member includes a lower end and an upper end, the cavity extends from the lower end toward the upper end of the shell member, the internal receptor element includes a central axis extending longitudinally between the lower end and the upper end of the shell member, the external securing element includes a central axis extending longitudinally between the lower end and the upper end of the shell member, and the central axis of the internal receptor element makes an acute angle with the central axis of the external securing element.

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15. The invention of claim 14 wherein the internal securing element of the shell member and the external securing element of the securing member include complementary tapered securing surfaces for interlocking in response to seating engagement of the complementary securing surfaces.

16. The invention of claim 15 wherein the internal receptor element of the securing member and the external receptor element of the bearing member include complementary securing surfaces for interlocking upon seating engagement of the complementary securing surfaces.

17. The invention of claim 16 wherein the complementary securing surfaces of the external receptor element include complementary tapered surfaces for interlocking in response to seating engagement of the complementary tapered surfaces.

18. The invention of claim 17 wherein the shell member includes at least one depending finger extending downwardly from the lower end of the shell member, and the metallic securing member includes a flange extending laterally outwardly from the lower end of the securing member for engaging the depending finger to preclude the seating engagement of the complementary tapered securing surfaces of the shell member and the securing member, and at least one notch in the flange, the notch being configured for accepting entrance of the finger into the notch upon alignment of the notch with the finger, such alignment of the notch with the finger being accomplished upon a desired orientation and alignment of the securing member, and the bearing member therein, relative to the shell member, for enabling seating engagement of the complementary tapered surfaces with the bearing member in the desired orientation and alignment.

19. The invention of claim 1 including a cushion at the lower end of the securing member for interposition between the securing member and the femoral component.

20. A shell member for use in an acetabular cup assembly having an internal bearing member for selective securement within the shell member interoperatively, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the shell member comprising:

- an internal cavity;
- a first securing element within the cavity of the shell member, the first securing element having a first securing structure compatible with the securement characteristics of at least one of the plurality of internal bearing members; and
- a second securing element within the cavity of the shell member, the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members;

the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly interoperatively.

21. The invention of claim 20 wherein the shell member includes a lower end and an upper end, the cavity extends

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from the lower end toward the upper end of the shell member, and the first and second securing elements are located adjacent the lower end of the shell member.

22. The invention of claim 21 wherein the bearing member includes a rib projecting from the bearing member, and the first securing element includes a recess in the shell member for receiving the rib of the bearing member.

23. The invention of claim 21 wherein the bearing member includes an external securing surface, and the second securing element includes an internal securing surface, the external securing surface and the internal securing surface having complementary tapered configurations for interlocking in response to seating engagement of the complementary tapered configurations.

24. The invention of claim 23 wherein the bearing member includes a rib projecting from the bearing member, and the first securing element includes a recess in the shell member for receiving the rib of the bearing member, the tapered configuration of the internal securing surface extends between an upper end and a lower end, and the recess is located intermediate the upper end and the lower end of the tapered configuration of the internal securing surface to establish an upper internal securing surface segment and a lower internal securing surface segment, with each of the upper and lower internal securing surface segments having a length between the upper and lower ends of the internal securing surface sufficient to maintain securing effectiveness throughout the internal securing surface.

25. The invention of claim 24 wherein the recess is located essentially midway between the upper and lower ends of the internal securing surface.

26. The invention of claim 25 wherein the bearing member includes an upper end and a lower end spaced in an axial direction from the upper end, and the rib includes a cross-sectional profile contour configuration having an upper section confronting the upper end of the bearing member, a lower section confronting the lower end of the bearing member, and an intermediate section between the upper and lower sections, the upper section making a first acute angle with the axial direction, the lower section making an obtuse angle with the axial direction, and the intermediate section making a second acute angle with the axial direction, the second acute angle being smaller than the first acute angle so as to establish tapered surfaces along the upper and intermediate sections for facilitating engagement of the rib within the recess, and a locking surface along the lower section for retaining the rib within the recess, while providing the rib with resistance to shearing from the bearing member.

27. A kit of component parts for assembling an acetabular cup assembly having an internal bearing member for selective securement within a shell member interoperatively, the kit comprising:

- a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of a selected one of the internal bearing members;

the shell member comprising:

- an internal cavity;
- a first securing element within the cavity of the shell member, the first securing element having a first securing structure compatible with the securement characteristics of at least one of the plurality of internal bearing members; and
- a second securing element within the cavity of the shell member, the second securing element having a sec-

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ond securing structure compatible with the secure-  
ment characteristics of at least another of the plural-  
ity of internal bearing members; the first and second  
securing elements being juxtaposed with one another  
and placed at relative locations such that the effective- 5  
ness of each of the first and second securing  
elements is maintained while in the presence of the  
other of the first and second securing elements,  
whereby the one and the another of the internal  
bearing members each is selectable for effective 10  
selective securement within the shell member as the  
selected one bearing member to complete the  
acetabular cup assembly interoperatively.

28. The invention of claim 27 wherein the shell member  
includes a lower end and an upper end, the cavity extends 15  
from the lower end toward the upper end of the shell  
member, and the first and second securing elements are  
located adjacent the lower end of the shell member.

29. The invention of claim 28 wherein the bearing mem- 20  
ber includes a rib projecting from the bearing member, and  
the first securing element includes a recess in the shell  
member for receiving the rib of the bearing member.

30. The invention of claim 28 wherein the bearing mem- 25  
ber includes an external securing surface, and the second  
securing element includes an internal securing surface, the  
external securing surface and the internal securing surface  
having complementary tapered configurations for interlock-  
ing in response to seating engagement of the complementary  
tapered configurations.

31. The invention of claim 30 wherein the bearing mem- 30  
ber includes a rib projecting from the bearing member, and  
the first securing element includes a recess in the shell  
member for receiving the rib of the bearing member, the  
tapered configuration of the internal securing surface  
extends between an upper end and a lower end, and the 35  
recess is located intermediate the upper end and the lower  
end of the tapered configuration of the internal securing  
surface to establish an upper internal securing surface seg-  
ment and a lower internal securing surface segment, with  
each of the upper and lower internal securing surface seg-

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ments having a length between the upper and lower ends of  
the internal securing surface sufficient to maintain securing  
effectiveness throughout the internal securing surface.

32. The invention of claim 31 wherein the recess is  
located essentially midway between the upper and lower  
ends of the internal securing surface.

33. An improvement in a method for implanting an  
acetabular cup assembly having an external shell member  
with an internal cavity, and an internal bearing member for  
securement within the cavity interoperatively, the internal  
bearing member being selected from a plurality of bearing  
members having different characteristics, including different  
securement characteristics, such that the acetabular cup  
assembly selectively is provided with characteristics corre-  
sponding to the characteristics of the selected internal bear-  
ing member, the improvement comprising the steps of:

providing a first securing element within the cavity of the  
shell member, the first securing element having a first  
securing structure compatible with the securement  
characteristics of at least one of the plurality of internal  
bearing members;

providing a second securing element within the cavity of  
the shell member, the second securing element having  
a second securing structure compatible with the secure-  
ment characteristics of at least another of the plurality  
of internal bearing members; and

selecting the one or the another of the internal bearing  
members and securing the selected internal bearing  
member within the shell member by engaging the  
selected internal bearing member with the correspond-  
ing first securing element or second securing element  
for completion of the acetabular cup assembly interop-  
eratively.

34. The method of claim 33 including implanting the shell  
member at an implant site prior to securing the selected  
internal bearing member within the cavity of the shell  
member.

\* \* \* \* \*





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(54) **ACETABULAR CUP ASSEMBLY WITH  
SELECTED BEARING**

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(52) **U.S. Cl.** ..... **623/22.28; 623/22.21**

(58) **Field of Classification Search** ..... None  
See application file for complete search history.

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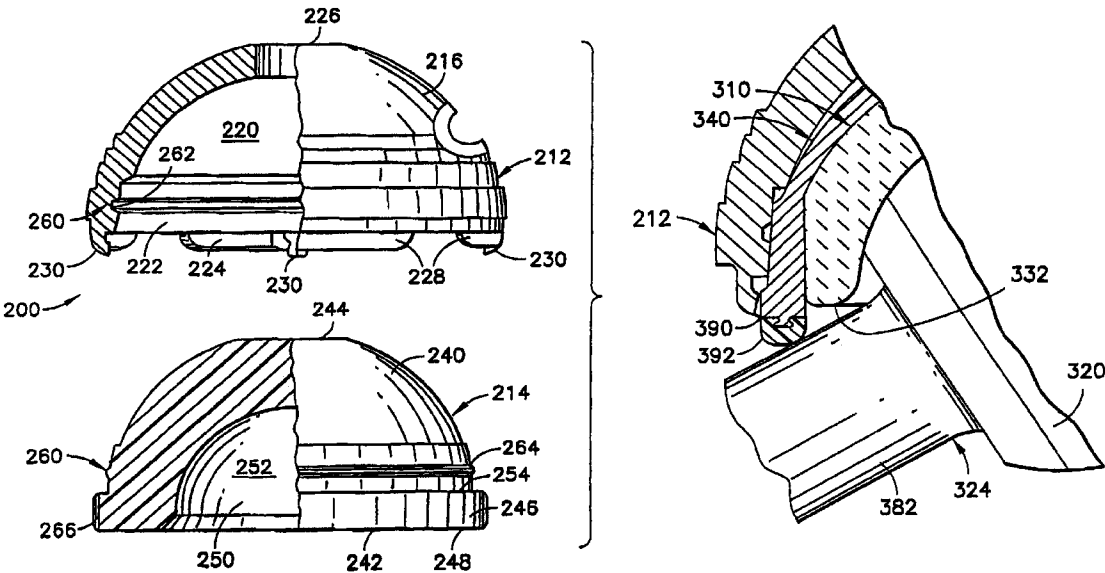
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*Primary Examiner*—Glenn K. Dawson

(57) **ABSTRACT**

An acetabular cup assembly allows pre-operative or inter-operative selection and securement of a bearing member within a shell member of the acetabular cup assembly, the bearing member being selected from a plurality of bearing members having different characteristics, including bearing characteristics, securement characteristics, position characteristics and orientation characteristics, so as to enable a surgeon to select those characteristics most appropriate to a particular patient, as determined by a pre-operative assessment or by an evaluation of conditions encountered at an implant site during the implant procedure, and to incorporate the desired characteristics into the acetabular cup assembly with ease and economy.



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EX PARTE  
REEXAMINATION CERTIFICATE  
ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS  
INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Claims 21-24, 26, 33 and 34 are cancelled.

Claims 20 and 25 are determined to be patentable as amended.

New claims 35-55 are added and determined to be patentable.

Claims 1-19 and 27-32 were not reexamined.

20. [A] An assembly having a shell member [for use in an acetabular cup assembly having] and an internal bearing member for selective securement within the shell member interoperatively, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the shell member comprising:

- an internal cavity;
- a first securing element within the cavity of the shell member, the first securing element having a first securing structure compatible with the securement characteristics of at least one of the plurality of internal bearing members; and
- a second securing element within the cavity of the shell member, the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members;

the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly interoperatively;

wherein the shell member includes a lower end and an upper end, the cavity extends from the lower end toward the upper end of the shell member, and the first and second securing elements are located adjacent the lower end of the shell member;

wherein the bearing member includes an external securing surface, and the second securing element includes an internal securing surface, the external securing surface and the internal securing surface having complementary tapered configurations for interlocking in response to seating engagement of the complementary tapered configurations; and

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wherein the bearing member includes a rib projecting from the bearing member, and the first securing element includes a recess in the shell member for receiving the rib of the bearing member, the tapered configuration of the internal securing surface extends between an upper end and a lower end.

25. The invention of claim [24] 20 wherein the recess is located essentially midway between the upper and lower ends of the internal securing surface.

35. The assembly of claim 20, further comprising at least one anti-rotation element configured to engage a complementary anti-rotation element of the bearing member.

36. The assembly of claim 20, wherein the different characteristics of the internal bearing members include different materials.

37. The assembly of claim 36, wherein the material of the at least one of the plurality of internal bearing members includes at least one of ceramic, metal, and plastic.

38. The assembly of claim 37, wherein the at least one of the plurality of internal bearing members comprises a projection extending from the bearing member, and the first securing element includes a recess in the shell member for receiving the projection of the bearing member.

39. The assembly of claim 20, wherein the bearing member includes a lower end and an upper end, and the lower end of the bearing member extends beyond the lower end of the shell member when the bearing member is assembled in the shell member.

40. The assembly of claim 20, wherein the recess is located intermediate the upper end and the lower end of the tapered configuration of the internal securing surface to establish an upper internal securing surface segment and a lower internal securing surface segment, with each of the upper and lower internal securing surface segments having a length between the upper and lower ends of the internal securing surface sufficient to maintain securing effectiveness throughout the internal securing surface.

41. An acetabular cup system, comprising:  
a plurality of internal bearing members, each comprising:  
an inner bearing surface for receiving a head member;  
an outer surface; and  
a central bearing member axis defined by the outer surface;

the internal bearing members having different characteristics, including different axial securement characteristics and different material characteristics, wherein (i) at least one first internal bearing member of the plurality comprises a polyethylene bearing surface and a securement projection on the outer surface, and (ii) at least one second internal bearing member of the plurality comprises a metal or ceramic bearing surface and an outer securement taper extending axially; and  
a shell member, comprising:

an external surface, an internal surface, a central shell axis which coincides with the central bearing member axis when assembled, the external surface having an apex at one end and a peripheral end surface at the opposite end and which is the outermost axial extent of the shell member at that opposite end, the internal surface defining an internal cavity;

at least one securement recess in the internal surface within the cavity of the shell member and spaced axially from the peripheral end surface and not extending to the external surface, the securement recess being compatible with the securement projection of the at least one first internal bearing member of the plurality of internal bearing members to axi-

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ally secure the first internal bearing member within the shell member; and

an internal securement taper on the internal surface within the cavity of the shell member, the internal securement taper extending axially and being compatible with the outer securement taper of the at least one second internal bearing member of the plurality of internal bearing members to axially secure the second internal bearing member within the shell member;

the securement recess and the internal securement taper being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other of the securement recess and the internal securement taper, whereby the first and the second of the internal bearing members each is selectable for effective selective axial securement within the cavity of the shell member to complete the acetabular cup assembly intraoperatively.

42. The system of claim 41, wherein the different characteristics of the plurality of bearing members include different orientations of a bearing socket relative to the cavity of the shell member when the bearing member and the shell member are in seated engagement.

43. The system of claim 41, wherein the different characteristics of the plurality of bearing members include different locations of a bearing socket relative to the cavity of the shell member when the bearing member and the shell member are in seated engagement.

44. The system of claim 41, wherein the securement recess and the securement taper are located adjacent the peripheral end surface of the shell member.

45. The system of claim 41, the bearing member further including at least one bearing anti-rotation element and the shell member further including at least one shell anti-rotation element compatible with the bearing anti-rotation element to rotationally fix the bearing member within the cavity of the shell member.

46. The system of claim 45, wherein the bearing anti-rotation element is on the outer surface of the bearing member and the shell anti-rotation element is a recess that extends into the peripheral end surface of the shell member.

47. The system of claim 41, wherein the bearing member extends beyond the peripheral end surface of the shell member when the bearing member is assembled in the shell member.

48. The system of claim 41, wherein the recess extends circumferentially about the cavity of the shell member.

49. An acetabular cup assembly, comprising:

a first internal bearing member, comprising:

an inner surface for receiving a head member;  
an outer surface;

wherein the internal bearing is selected from a plurality of bearing members having different characteristics, including different securement characteristics and different material characteristics, such that the acetabular cup assembly is provided with characteristics corresponding to the characteristics of the selected internal bearing member; and

a shell member, comprising:

an internal cavity;

a first securing element within the cavity of the shell member, the first securing element having a first securing structure compatible with the securement characteristics of at least one of the plurality of internal bearing members; and

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a second securing element within the cavity of the shell member, the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members;

the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly interoperatively;

wherein the material of the selected bearing member includes at least one of ceramic, metal, and plastic; and wherein the outer surface of the selected bearing member includes a metal material and the inner surface of the selected bearing member includes ceramic.

50. An acetabular cup assembly, comprising:

a first internal bearing member, comprising:

an inner surface for receiving a head member;  
an outer surface;

wherein the internal bearing is selected from a plurality of bearing members having different characteristics, including different securement characteristics and different material characteristics, such that the acetabular cup assembly is provided with characteristics corresponding to the characteristics of the selected internal bearing member; and

a shell member, comprising:

an internal cavity;

a first securing element within the cavity of the shell member, the first securing element having a first securing structure compatible with the securement characteristics of at least one of the plurality of internal bearing members; and

a second securing element within the cavity of the shell member, the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members;

the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly interoperatively;

wherein the material of the selected bearing member includes at least one of ceramic, metal, and plastic; and wherein the selected bearing member includes a ceramic bearing surface and a metal securing sleeve, wherein the securing sleeve includes a securement characteristic which is compatible with the first or second securing element of the shell member.

51. An assembly having a shell member and an internal bearing member for selective securement within the shell member interoperatively, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different securement characteristics, such that the acetabular cup assembly selectively is provided with characteristics corresponding to the characteristics of the selected internal bearing member, the shell member comprising:

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an internal cavity;  
a first securing element within the cavity of the shell member, the first securing element having a first securing structure compatible with the securement characteristics of at least one of the plurality of internal bearing members; and  
a second securing element within the cavity of the shell member, the second securing element having a second securing structure compatible with the securement characteristics of at least another of the plurality of internal bearing members;  
the first and second securing structures being juxtaposed with one another and placed at relative locations such that the effectiveness of each of the first and second securing elements is maintained while in the presence of the other of the first and second securing elements, whereby the one and the another of the internal bearing members each is selectable for effective selective securement within the shell member to complete the acetabular cup assembly intraoperatively;  
wherein the different characteristics of the internal bearing members include different materials;  
wherein the bearing member includes an external securing surface, and the second securing element includes an internal securing surface, the external securing surface and the internal securing surface having complementary tapered configurations for interlocking in response to seating engagement of the complementary tapered configurations; and  
wherein the bearing member includes a ceramic bearing surface and a metal securing sleeve, wherein the securing sleeve includes the tapered configuration complementary with the internal securing surface of the shell member.

52. The shell member of claim 51, wherein the first securing element includes a recess in the internal cavity of the shell member and a first bearing member is polyethylene and further includes a projection extending from the outer surface for reception within the recess.

53. A method for implanting an acetabular cup, comprising the steps of:  
providing an external shell member with an internal cavity and a central shell axis, the shell member having at least one securement recess within the cavity of the shell member and an internal securement taper within the cavity of the shell member and extending axially, wherein the securement recess and the internal securement taper are in juxtaposition with one another and

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placed at relative locations such that the effectiveness of each of the securement recess and the internal securement taper is maintained while in the presence of the other of the securement recess and the internal securement taper;  
providing an internal bearing member for axial securement within the cavity intraoperatively and having a central bearing axis, the central shell axis coinciding with the central bearing axis when the shell member and bearing member are assembled, the internal bearing member being selected from a plurality of bearing members having different characteristics, including different material characteristics and axial securement characteristics, wherein (i) at least one first internal bearing member of the plurality comprises a polyethylene bearing surface and a securement projection on the outer surface, and (ii) at least one second internal bearing member of the plurality comprises a metal or ceramic bearing surface and an outer securement taper extending axially, wherein the securement recess is compatible with the securement projection of the first internal bearing member of the plurality of internal bearing members to axially secure the first internal bearing member within the shell member, and the internal securement taper is compatible with the outer securement taper of the second internal bearing member of the plurality of internal bearing members to axially secure the second internal bearing member with the shell;  
selecting the first internal bearing member or the second internal bearing member; and  
securing the selected internal bearing member within the shell member by engaging the selected internal bearing member with the corresponding securement recess or securement taper for axial securement of the selected bearing member within the shell member and completion of the acetabular cup assembly intraoperatively.

54. The method in claim 53, wherein at least one bearing members among the plurality of bearing members further includes at least one bearing anti-rotation element and the shell member further includes at least one shell anti-rotation element configured to engage the bearing anti-rotation element of a bearing member to rotationally fix the bearing member within the cavity of the shell member.

55. The method of claim 54, wherein the at least one bearing anti-rotation element includes a protrusion, and the shell anti-rotation element includes a recess.

\* \* \* \* \*



## CERTIFICATE OF SERVICE

I hereby certify that on March 3, 2015, I caused the foregoing Brief of Plaintiffs-Appellants Howmedica Osteonics Corp. and Stryker Ireland Ltd. to be electronically filed with the Clerk of Court using the CM/ECF system, and thereby served via CM/ECF on counsel for Defendants-Appellants.

Dated: March 3, 2015

/s/ George C. Lombardi

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**CERTIFICATE OF COMPLIANCE  
WITH TYPE-VOLUME LIMITATION, TYPEFACE  
REQUIREMENTS, AND TYPE STYLE REQUIREMENTS**

1. This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 28.1(e)(2) because it contains 12,394 words as counted by Microsoft Word 2010, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii) and Fed. Cir. R. 32(b).

2. This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because it has been prepared in 14-point Century Schoolbook, a proportionally spaced typeface, using Microsoft Word 2010.

Dated: March 3, 2015

/s/ George C. Lombardi

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